Industrial FINISHING

Reg. U. S. Pat. Office

Devoted to Product Finishing in the Factory

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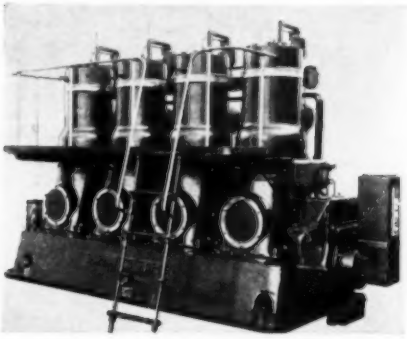

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For proof of the efficiency of DeVilbiss Equipment, consider the experiences of leaders in all fields of manufacture who rely on this equipment to do a fast, dependable finishing job . . . From years of use, Fairbanks, Morse & Company have found that DeVilbiss Equipment produces better, more lasting finishes—saves time and labor—reduces production costs . . . Investigate the latest developments in DeVilbiss Spray-Finishing and Exhaust Equipment.

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Letters from Readers of "Industrial Finishing"

Editor's Note — These letters have been promptly answered and all of the inquiries have been referred to advertisers in the magazine. They are published here to indicate or suggest certain interesting trends of thought and activity in the industry, and to encourage further inquiries, comments and suggestions. The names and addresses of firms or individuals whose letters are published here may be had by writing to this office, or letters addressed to them in care of this office will be forwarded immediately.

Imitation Gold Plate

I see in September issue of INDUSTRIAL FINISHING the article by Chas. W. Hardy where he writes about "a very good imitation of gold plate." Can you tell me where I can get this imitation gold plate, and something about it? Can you give me the address of companies who sell Dendritic metal paints, or the kind of paint or lacquer that leaves pure metal? It is something new out now and I wish to get some. I believe some are called pure cold liquid metals. Are there any new burnished metal finishes out?—C. W.

Buffed Maple Finish

Please send us the latest copy of your publication. We understand that your magazine deals entirely with the problem of finishes on wood, as well as other materials.

Perhaps you have at your command information that we desire. We would like to know the process that might be employed in the finishing of any hardwood such as maple. By finishing, we mean, after the wood has been sanded as fine as possible with sandpaper, is there a method of buffing such wood either on a buffing wheel or a buffing belt so as to give the wood an actual polish, and at the same time, filling up the pores? The filler or polish that might be used in buffing, must be the type that will allow lacquer sealer and lacquer to cover it after it is buffed. Perhaps you can tell us a firm who handles the type of material and supplies that can be used in obtaining the finish.—H. R. Co.

Finishing Maple

Some time ago I noticed an item in INDUSTRIAL FINISHING magazine about a stain for light maple that does not raise the grain and will do away with sanding. Or if you know of some way to do a good job cheaply I would appreciate your help in the matter.—E. F. J.

This inquirer has been given tear sheets of previously published articles on this subject, along with names of several manufacturers of suitable finishing materials for maple.—Ed.

Crystallizing Lacquer

We are endeavoring to develop an effect through the use of a crystallizing lacquer. We want it to create an effect that I have seen but am unable to accomplish either in our finishing department or through the aid of the local paint houses.

The effect desired is a solid ground color under a crystallized top coating. A local paint distributor has secured for us a lacquer undercoating in natural color and also a crystallizing lacquer, but apparently they do not know the method of securing the effect we desire, and will appreciate any information you may be able to give us. The particular colors we wish to develop for the immediate work are silver gray

Reduced from 10x14-in.
Clear Crystal Lacquer Panel

WALKER'S
MODERN
CRYSTAL
LACQUER

—for finishing METAL, GLASS, WOOD, FIBRE, PAPER, COMPOSITION, METAL FOIL.

Clear or in colors. Noted for its uniformity and very high quality.

Send Coupon for Sample and full information.

H. V. Walker Co.
Makers of
Fine Finishes
ELIZABETH,
N. J.

H. V. WALKER CO., ELIZABETH, N. J.
Send Sample of Crystal Lacquer. We wish to use it on ..... Surface.
Name.....
Address.....

and canary yellow. — C. Mfg. Co. ("The Master Fixture Builders").

This company has been supplied with tear sheets of previously published articles about the use of crystallizing lacquers . . . And has been referred to several concerns that make crystallizing lacquers.

Machine Tool Gray

An item in your publication stated that the Machine Tool Builders had adopted a standard color for coating machines. If so, will you please advise me where I could secure a shade showing their color?—C. F. H.

We suggest you write the National Machine Tool Builders Association, 630 Vine St., Cincinnati, Ohio; or The Lowe Bros. Co., 452 E. 3rd St., Dayton, Ohio.—Ed.

Wool, Cotton, Rayon Flock

If you could make us acquainted with sources of supply for wool, cotton and rayon flock, we would be very thankful.—S. W. J. (Finishing Materials).

These products are regularly advertised in INDUSTRIAL FINISHING by two concerns . . . Claremont Waste Mfg. Co., Claremont, N. H., and Myers-Lipman Wool Stock Co., Inc., 283 W. Broadway, New York, N. Y.

Stencil Screen Work

We ask that you kindly give us the address of the Prairie State Products Co., as we are interested in their stencil screen work, as mentioned in a feature article in INDUSTRIAL FINISHING magazine for November. (Pages 16, 17, 18, 19)—T. K. Co. (Seating Mfrs.).

The Prairie State Products Co. is located at 1631 S. Michigan Ave., Chicago, Ill.—Ed.

We are interested in receiving information regarding silk-screen printing and it has been brought to our attention that articles on this subject can be found in the August and September issues of INDUSTRIAL FINISHING. It would be very much appreciated if you would send us these magazines, charging us with any expense involved in so doing.

We are desirous of becoming acquainted with this magazine, and any other issues that you would care

ADVERTISING PAGES REMOVED

to send us will be appreciated.—G. V. Co. (Trimmings for Furniture, Airplanes, Motor Boats, etc.).

We are also sending a copy of November issue which contains an excellent article entitled "Stencil Screen Work in Production" by H. L. Hiett.—Ed.

Your article "Stencil Screen Work in Production" in the November issue, by H. L. Hiett, interests me and I would like to know if I can get one of the books he has published.—D. E. R.

Mr. H. L. Hiett's new book "Screen Process Production" contains 256 pages 6x9-in., 110 illustrations, and is attractively bound in stiff cloth covers; price $3.00. INDUSTRIAL FINISHING can supply it.

A friend of mine gave me a copy of the September issue of INDUSTRIAL FINISHING. I notice that you have been running a series of articles on the Photographic Method of Making Silk Screen Stencils. Somebody beat me to this because this portion had been torn out of the book. I am enclosing a dollar and ask that you start with the first article on this and let me have the following magazines that pertain to this subject.

I also notice on page 5 of the September magazine where somebody had written in regarding a stain that would not raise the grain on wood. Would you please give us the name of this manufacturer?—U. S. M. Co. (Kitchen Sets).

Low Pressure Gun

We understand there is a new type low-pressure air gun on the market. Will you kindly advise us who makes this gun?—N. H. Co. (Distinctive Rustic Furniture).

Picklett; Temp-Urd Wood

We note in the January, 1936, issue of INDUSTRIAL FINISHING, on page 29, that you have a description of "Picklett" and "Temp-Urd Wood Process" for hardening wood. We would like to find out where we can get in touch with manufacturers of these products; also if you have a list of the manufacturers of the products described in this issue of the magazine.—C. W. Furn. Mfg. Co.

"Picklett" is a product of W. I. B.

(Continued on page 77)

An open Letter
To The
FURNITURE
MANUFACTURER

Gentlemen:

You are vitally interested in furniture finishing materials that give your product eye appeal.

Convincing proof of "Spruance Quality" is the fact that we number among our customers of long standing, manufacturers nationally important in the industry.

Mr. Furniture Manufacturer, you be the judge! Just tell us the kind of wood you will finish, the type of material you require; and samples will be promptly sent.

Very truly yours,

THE GILBERT SPRUANCE CO.

Gilbert Spruance

President

The Gilbert Spruance Co.
RICHMOND AND TIOGA STS.
PHILADELPHIA, PA.

Designs and Colors of the

by W. H. Rohr

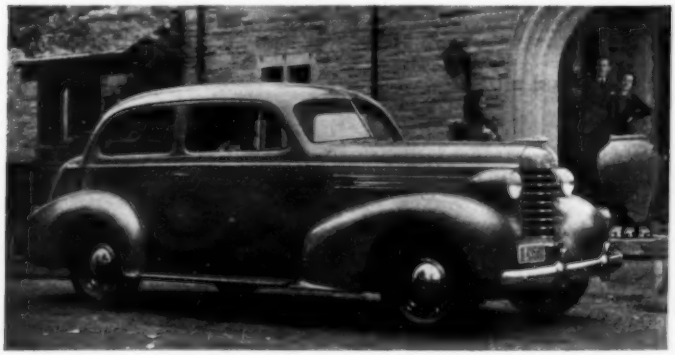
SMOOTHLY contoured and gracefully streamlined, with many refinements that contribute to utility, safety and beauty. This briefly sums up the chief characteristics of body designs on the 1937 automobiles exhibited at automobile shows held in all the leading cities of the United States during mid-November.

Practically all makes of cars now have the all-steel top. Windshields continue to slope at an angle; some are of the V-type with a dividing bar between the right and left halves, while others have the one-piece glass.

Front ends show evidence of having received considerable attention from the designers. The former V-type of sloping radiator grill that was so rapidly approaching the shape of a locomotive pilot or "cow catcher," reached its peak last year. On this year's models it has been radically changed on most of the cars to a rounded or bullet shaped front similar to what is used on some of the racing cars. When viewed from the side, or in profile, many of the radiator grills are back to vertical position again. Others have a gentle straight or bowed slope from top to bottom. The Fords and Lincoln-Zephyrs have a gracefully curved V-type sloping front end similar to last year's Lincoln-Zephyr.

More and more radiator grill bars extend crosswise; for example, Buick, Chrysler, DeSoto, Dodge, Ford, Lafayette, Oldsmobile-6, Pontiac and Studebaker.

Oldsmobile-6 2-door touring sedan.



1937 Automobiles

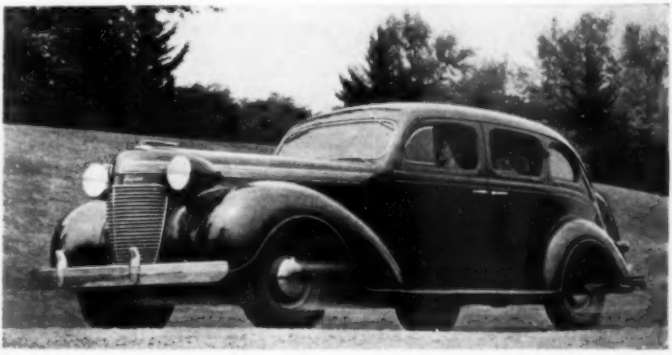
EXHIBITED AT THE MID-NOVEMBER SHOWS

Some have a square mesh effect as on the Cadillac, LaSalle and Oldsmobile-8. Others extend from top to bottom as on Chevrolet, Graham, Hudson, Nash, Packard, Plymouth and Terraplane.

Long streamlined head lamps appear to grow out of the side of the hood or radiator shell, or up from a space between the hood and front fenders. On several cars the top of the hood is all in one piece, as in the 1936 Cord; it hinges at the cowl and is opened by raising up the front end. Side walls of hoods are removable to give access to the engine. Fancy gadgets such as goddesses, mermaids, rams and miniature blimps are still used on the front top of the hood where formerly the radiator cap was placed. Only one make of car shows horn on the outside.

On a number of the cars door handles are curved in toward the body to prevent them from catching and tearing people's clothes or spearing the unfortunate pedestrian who happens to walk into or fall against the side of the moving car.

Hood louvres are placed high and are streamlined back in a straight line. Probably more variety in design appears in this detail than in other outward details of the cars. Side louvres on a few cars are merely a continuation of some of the parallel chromium bars extending horizontally across the front, as on Chrysler, DeSoto, Pontiac and Studebaker. Others consist of various bits of fancy openings (including ears as on Graham) trimmed in chromi-



New Chrysler Imperial 4-door sedan.

um, but all are strung out in a straight horizontal line.

The rear ends of all cars are similar in that they slope back and down, spreading out at the bottom like a beaver's tail. The built-in trunk, which is now available in all cars, makes an extra graceful sweeping hump mid-way between top and bottom at the rear—a little below the sloping divided rear window. Rear bumpers extend clear across the width of the car, the same as front bumpers. Tail lights on Oldsmobile are moved up to the side of the body in line with the body stripe, so the driver sitting low in a high-hooded car coming up from behind can see them. License plate brackets and lights are centered at the rear on practically all cars. Some of these light fixtures are above, while others are below the license bracket. A few are quite elaborate and massive, as on the large Buicks.

Fenders are deeply valanced; front fenders join up high along the side wall of the hood. Rear fenders of more makes of cars are shown with shields which hide the rear wheels.

Practically all of the wheels are or appear to be of the disc type, with large chromium hub caps bearing the name of the car. The pressed-metal artillery type wheels have spokes so short and so wide that the wheel appears to be a full disc.

Body Colors

All manufacturers have cars in black and most of them have models in one or two shades of gray, including gunmetal which is quite popular, maroon, blue, green, beige and tan or some color including or mid-way between yellow and brown or red—for example, burnt orange and others. The particular shades or hues of these common colors are given fancy names such as Burmuda blue, Beverly blue, Glacier Park gray, Wellington gray, Windsor gray, Miami green, Imperial black, Velvet black, Bengal brown, etc.

Bodies, fenders, hoods and generally wheels are of one solid color which tends to tie the entire ensemble up as one single unit. Most of the lighter colors are given an attractive metallic luster—an opalescent effect—which is remarkably pleasing to the

Below: The new Willys 4-door sedan.

eye. A few makes of cars haven't even a body stripe in color, the line along the side from hood to rear being a bright chromium molding which is anywhere from ½ to 1¼-in. wide. Buick is a typical example. On one or more cars this chromium molding has a narrow painted groove near the top edge. In some cases a color stripe as wide as ½-in., or ¾-in., with or without the chromium molding, is used.

In the majority of cars the color stripes consist of two or three parallel pencil stripes. Where three stripes are used the two outside stripes are of one color—often a lighter or darker shade of of the body color—while the middle stripe is one of contrast. For example, on a dark green body, two light green stripes and a middle stripe of orange.

One or two sets of parallel pencil stripes (of two stripes each) appear on many of the attractively shaped disc wheels. An exception to this appears on the Pontiac which shows about a 2-in. ring of different color next to the big chromium hub caps. This looks very attractive. Some of the Packards have a single pencil stripe of harmonizing color around the group of windows on each side (instead of around each window) and around the window at the back; also two parallel pencil stripes near the edges of the fenders.

Hardware and trimmings on the outsides of all cars are generally in brightly polished chromium.

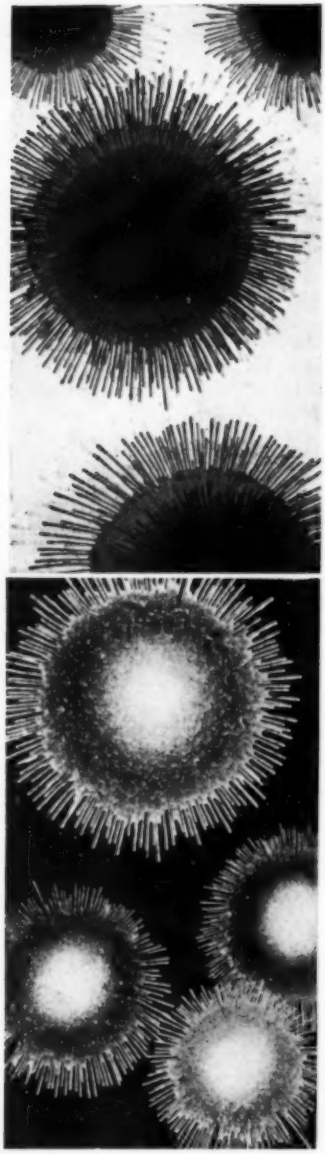
Inside the cars window moldings, and in some cases the instrument board, are in woodgrained finish or in a two-tone mottled color finish. The wood grain reproductions are red or brown mahogany, light brown walnut or some similar color. Blond wood reproductions such as maple, sycamore, prima vera and pine haven't appeared as yet. Perhaps they will come next year.

Some instrument boards are in one or two color tones of gray or other suitable color, the finish being generally mildly figured or mottled in some way to avoid a solid color which would so easily show stains, marks and evidence of wear.

Instrument panels on many cars are real works of art—very attractive and intriguing. Perhaps the most elaborate is on the Cord which reminds you of what you see when you open the back of an expensive jeweled watch. Extending clear across the front dash is a stainless steel panel with engine turned finish which has openings for 16 airplane type instruments. The indirect illumination can be adjusted from dim to bright to suit the preference of the driver. You may think it is an extravagance to include an attractive instrument panel, but one lady who had seated herself in a car having a rather plain dull-finished "skimpy" instrument panel, was heard to remark: "Oh, this instrument panel looks so cheap." . . . . And remember this: What the ladies think of a car carries a lot of weight with the men who buy cars.

Finishes are so smooth, lustrous and highly polished that they reflect lights like a mirror. They are easy to clean and inviting to keep clean.

The buffing of finishes to smooth and polish them is attracting considerable interest.



Decorative Fin

by Albert F. Byers
Benjamin Franklin Paint & Varnish Co.

ORDINARY PIGMENTED lacquers may be used to produce spattered "salt-and-pepper" effects that are both colorful and pleasing.

A ground coat of the desired background should be applied in whatever manner is feasible. When this is dry, lacquer of a contrasting or harmonizing color may be sprayed over it in such a manner that the lacquer does not strike the surface as a wet mist and thus produce a uniform film, but rather strikes the surface as specks. To accomplish this, it is necessary for the spray man to hold the gun about 3-ft. from the piece being decorated and use low air pressure, say about 20 or 30-lbs. The lacquer will then fall in specks, giving a colored salt-and-pepper effect. Any variety of colors may be applied to the same surface without hiding the ground coat, the color of which will be the predominating color of the object being finished.

While quite attractive, the effect produced by this method must not be confused with that produced with stipple or spatter lac-

Illustrations at left show two types of sunburst effect. The picture above was produced by pulling the trigger of the spray gun several times while held in some position; that below by pulling spray gun trigger only once.

Finishes » »

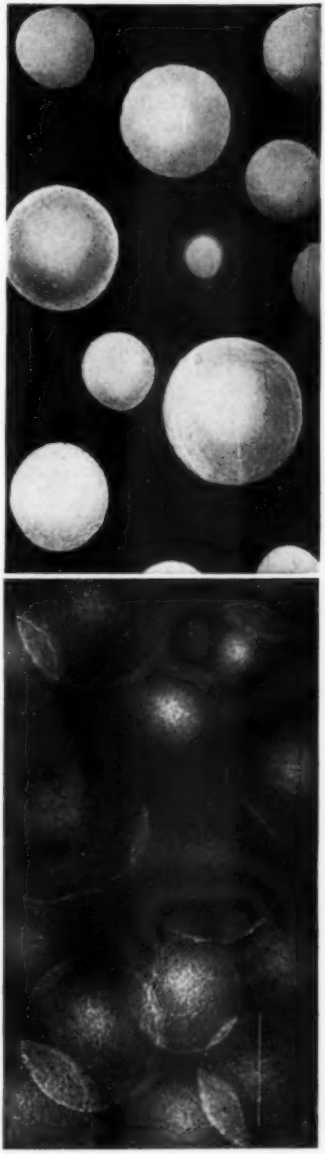
PART II

Novel effects produced by spray gun.

quer. The latter is a specially formulated product giving a slightly raised, bolder and more stringy or cobwebby spatter—quite different from the small salt-and-pepper specks produced by the former method.

Hammered Metal Effect

The hammered metal effect, illustrated elsewhere in this article, is based on a ground coat of aluminum or gold-bronze lacquer. After this background has been applied (usually by spraying) and has been allowed to dry, the final mottling or puddling coat is sprayed on. This latter coat consists of a special thin black lacquer. This very thin, watery solution is then sprayed at low air pressure over the ground-coated object, the surface of which must be kept horizontal to avoid runs. A full wet coat is applied and allowed to dry while the piece is still kept in the horizontal position. The thin lacquer collects in little puddles, depositing the black pigment in a pattern such as is characteristic of hammered metal. The fact that only flat surfaces can be coated satisfactorily

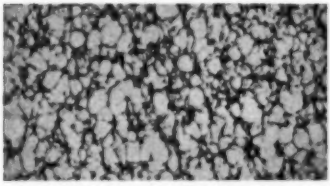


Illustrations at right show an opaque circle design at the top and a bubble effect at bottom. Opaque circles are produced by using an opaque lacquer. The bubble effect is obtained through use of a mildly tinted clear lacquer.

with this finish limits its use considerably, but within its limits it produces very effective results remarkably similar to hammered silver or gold.

Mosaic Effect

The same system as just described may be used to produce a mosaic effect. This is accomplished



A mosaic effect on white background.

by using a white lacquer background instead of aluminum or gold bronze. In every other respect the procedure is identical to that used to produce the hammered metal effect. Other novel two-toned effects may be achieved either by varying the color of the ground coat or by using special thin colored lacquers instead of the black.

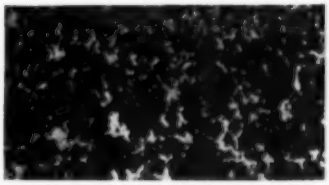
Star Dust Effect

This distinctive and interesting effect is produced by sprinkling dry aluminum or gold bronze powder over a suitable ground coat (usually dark blue or black) while the latter is still wet. The ground coat may be any paint product — paint, enamel, lacquer or japan; the same effect can be produced with any or all.

If rather coarse "star clusters" are desired, it is suggested that the dry powder be sprinkled from an ordinary pepper shaker. Tinier and generally more satisfactory effects can be achieved by filling an open-top can with the dry powder and then covering the open top with several layers of cheesecloth, stretched tight and fastened to the can by a rubber band. The dry powder will filter through the cloth when the operator shakes the can gently over the surface to be coated.

If an air gun is available, still finer effects may be produced by taking this same gauze-covered can, placing it upright before the article to be finished, and allowing the stream of air from the gun to play over the gauze. This will "kick up" enough of the dry powder to coat the piece, and the "star dust" will be much more evenly distributed over the surface than it would be if sprinkled by hand.

After the dry powder is applied by any of the methods just mentioned, a novel variation may be obtained by gently tapping the object finished so as to further disperse the powder. This gives the "star cluster" specks minute streamers suggestive of comet tails. These may be given a circular twist, or they may be spread



An example of hammered metal effect.

in a straight line according to the way the object is tapped.

To prevent the aluminum or gold bronze powder from dusting, a final finish coat of clear varnish or lacquer (according to the type of ground coat being used) should be applied by skillful spraying.

Burnished Finish

An extremely brilliant burnished effect may be produced by spraying or sprinkling gold bronze or aluminum powder onto a black wet-lacquer surface, and then, after said surface has thoroughly dried, rubbing it gently with a soft rag. This produces a much brighter and more "metallic" effect than would be possible by mixing the powder into the lacquer before applying, as is ordinarily done.

A burnished finish on a mirror frame.

Bubble, Opaque Circle and Sunburst Effects

While experimenting with decorative finishes, the writer achieved three effects which, for want of better names, he describes as: the bubble effect, the opaque circle design, and the sunburst effect, all of which are illustrated at the beginning of this part of the article.

All of these three effects are obtained with lacquers—by holding the spray gun close to the surface to be decorated (within about 6-in.) adjusting the nozzle to give a circular spray, and properly regulating finger pressure on the trigger. The latter essential takes but little skill and can be quickly and readily acquired by experimenting for a few minutes. .

For the bubble effect use (against a suitable background) clear lacquer to which has been added a very little pigment or gold or aluminum powder—just enough to lightly tint the lacquer. If too much pigment or powder is used, the effect will be that shown in the opaque circle design. This effect, as previously mentioned, is produced by using an opaque lacquer instead of a transparent one. The spraying procedure is similar to that of the bubble effect, and the materials used are the same. Only the proportions vary.

For the sunburst effect, use (against a suitable lacquered background) lacquer thinner (instead of clear lacquer) to which has been added sufficient amounts of aluminum or gold bronze powder to produce an opaque effect. The change from viscous lacquer to non-viscous thinner will produce the bursting-spatter effect instead of the even circular effect —provided, of course, that the material is sprayed in the same manner as that described above. The thinner will soften the lacquer ground coat and thus allow the powder to adhere. Any slight dusting that might take place upon drying can be eliminated by applying a final finishing coat of clear lacquer over the piece.

Much information of value about finishing materials, supplies and equipment is available in the advertising pages of INDUSTRIAL FINISHING.

YOU CAN SOLVE MANY PROBLEMS BY

Heating Your Enamel

by James A. Bede

Some interesting experiences of a metal-finishing foreman who has learned how much heat really affects the viscosity of finishing materials—and what can be done to make the enamels more easily workable without using so much thinner, all of which evaporates.

▼ ▼ ▼ ▼

WITH THE approach of cold weather it is particularly important for the alert paint foreman to anticipate any problems that may arise from the lowering of temperatures during the winter months. The varying condition of paint under fluctuating temperatures seems to be generally ignored. "Ignored" is perhaps the wrong term; I should say "unrecognized," for if it were more generally known, it certainly would not be ignored.

A few simple tests with a thermometer and a viscosity meter will show an astounding result. Heat has a tremendous reaction on the viscosity—that is the fluidity or flow of the paint. I have made extensive tests on oleo-resinous and synthetic enamels, japans, etc., and found their reaction generally the same, the synthetics reacting a little more. However, the constituents of the paint, that is the gums and solvents utilized, seem to alter the result somewhat.

Here is a typical result of a test on one synthetic enamel: Starting at a temperature of 50° F., the viscosity drops 10% when the paint is heated to 60°F.; another 10% when the temperature reaches 72°F. The viscosity drops proportionally until we reach a temperature of 122°F., when it is exactly half of what it was at the start of the test. To go much higher than that is not advisable; the viscosity would not drop much more and the point would be reached where the more volatile solvents begin to distill off.

The increased flow of paint brought on by heat is of dual causation. The gums and resins are brought to a more fluid state, and also the dissolving action of the solvents is greatly accelerated. But more of that later. The reduction in viscosity can be utilized very effectively in virtually all cases, especially where it is necessary to apply a heavy film.

The only purpose for adding thinner to paint is to thin it so that it may be more readily applied to the surface being finished, whether it be by brushing, dipping or spraying. Every drop of the thinner evaporates, leaving

only the solids behind. Obviously, it would be advantageous to obtain the same ease of application with a greatly reduced percentage of thinner. Where a thin film is wanted—for example, in japanning—heating it is a great aid toward increasing production. I made one test, for example, where the sprayer increased his hourly output from 400 parts per hour to 600, by simply raising the temperature of the japan in the pressure tank from the room temperature of 65°F. to 110°F. Where a heavy build is wanted, the thinner is greatly reduced or eliminated entirely.

It Reduced Labor Costs

To cite one instance where heating the paint was of great advantage, we had some coarse castings that formerly required a ground coat of surfacer, which was sanded and then the final coat of synthetic (reduced 30%) was applied. By heating the enamel to over 100°F. and applying it full body directly to the casting (leaving off the ground coat) we reduced the man hours of labor to one-tenth of what it formerly was, and obtained virtually the same result. To have sprayed that same enamel full-bodied at room temperature was impractical. A word of caution to any of the readers who wish to undertake the same procedure: The enamel should be somewhat "short," because the build, by this method, is so heavy that it may greatly extend the baking time.

As previously stated, heating not only reduces the viscosity of paints and enamels, but it also increases the solvency of the thinners. On several occasions we ran out of our supply of toluol and, as an emergency measure, substituted V. M. & P. naphtha in our synthetics—although these synthetics strictly called for a coal tar hydrocarbon thinner. The addition was made by first heating the enamel and then slowly pouring in the naphtha, at the same time stirring vigorously. However, I do not believe that this is good practice if the enamel is to be air-dried, or if any of the thinned material is to be carried in stock for future use.

Heat Liquifies Jelled Enamel

The increased solvent powers induced by heat was forcefully illustrated to me some time ago by an incident that I now look back upon rather humorously. Our plant manager advised me to be prepared for a small but very urgent order that was scheduled to come through within a week. He must have been fussy about it for he cautioned me several times to be ready for it. I checked my supply of paint (it was a special color) saw that I had more than enough, and gave it no further thought. At the prescribed time the parts to be painted were brought to the paint department.

Imagine my consternation when, on opening the can of paint, I discovered the enamel had jelled solid! I could literally cut it into cubes. I had visions of holding up the order for a week and, recalling the manager's repeated admonition to be prepared, I knew I had not the slightest alibi. You could hear for a distance of three blocks the weeping, wailing and gnashing of teeth.

I called several paint companies but the only advice they could offer was to throw the paint

away. Very helpful they were. I knew that thinners would do no good and, as it was around this time that I was beginning to become acquainted with the value of heating paints, I decided to try heat as a last resource. I placed the can in a tank of hot water. It was with some misgivings that I raised the lid 15 minutes later. Lo and behold! The result was like the answer to a maiden's prayer; it was perfect. The paint had come back into solution and I was able to spray it as easily as any other enamel. I kept the remaining paint under observation. It maintained its solution for approximately a month, when it again started to jell.

Author Becomes "Heat Conscious"

That experience made me very "heat conscious." I attempted applying heat to paint as an aid to solving any and every perplexing problem, and more often than not the results excelled my fondest hopes. I have read in this magazine where the attentive dipping operators thin their japans and enamels a day in advance of use. The purpose is to obtain a more complete saturation or blend of solvents with the paint. A more thorough and satisfactory result can be achieved in a few minutes by heating the thinned mixture.

We use a considerable quantity of aluminum powder which we obtain in paste form. Formerly it was a tedious task to break up the paste so that the bronzing liquid could be added. Now, with the aid of heat, this paste is quickly dissolved.

I could cite one illustration after another, where heating the paint was extremely beneficial, but it would be too bulky reading. Many of them were individual problems. But all paint shops have their own individual problems, and I believe that heating the paint helps solve many of them.

Methods of Heating Paints

As for the methods of heating the paints, perhaps the best is the electric heater that attaches directly to the fluid hose. An alternative is to heat the paint before placing it in the pressure tank. It will maintain a relatively high temperature for two or three hours. The most rapid and safe method of heating a can of paint is to suspend it in a larger can of boiling water, keeping a cover on it. In our plant we use a boiling caustic solution to degrease, and we find this very handy for all heating purposes. It is advantageous also to have the air for the spray gun heated, but not strictly necessary.

From the foregoing, the deduction I wish to point out is that the paint foreman who has to contend with low temperatures is laboring under a severe handicap. The installation of proper heating facilities is not only a wise but a necessary investment.

Editor's Note — After reading the original manuscript on the foregoing article we wrote the author, asking him several questions, including: 1) What happens when this heated enamel sprays through cooler air and hits a metal surface several degrees cooler than the enamel? 2) What is the safe maximum difference in the temperature of heated enamel and the metal to be sprayed? etc. In reply to these questions Mr. Bede promptly prepared the following supplementary notes:

In writing this article it was difficult for me to express only the highlights of the subject. Since this subject reaches to the very core and foundation of paints and their application, innumerable side issues and tangent problems come up for consideration. I tried as much as possible to omit my personal theories on the matter and give only what I felt were definite facts.

As for the reaction of heated paint to cool metal in the process of spraying, I can only offer theories. It would take a complicated, very delicate laboratory equipment to scientifically determine exactly what happens to the paint. Judging from the results, my conception is that the only noticeable effect is one of greater penetration of the pores of the metal, hence better adhesion.

Let us consider, for example, a can of synthetic enamel heated to about 125°F. We place it in the pressure tank. A certain amount of the heat is dissipated in the tank and fluid hose, so that the enamel reaches the gun at a temperature of about 100°F. Now in the process of spraying, the atomization of the enamel is completed ¼ to ½-in. from the tip of the gun; the rest of the fan action merely spreads out the atomized particles of enamel. It is safe to assume that there occurs a considerable drop in the temperature of the finely atomized particles of enamel as they are carried along by the rush of air, but this drop in temperature does not occur until after the atomization has been completed.

The only purpose for reducing viscosity, by adding thinners and heating, is to facilitate atomization. Where a heavy build of film is wanted, it would be highly desirable if the viscosity should rise after the atomization has been completed, which is exactly what does occur. How great the rise in viscosity, is dependent on many variable factors, such as solvents, difference of temperatures of the paint and metal, etc.

To express it all in a more demonstrative manner, let us assume that we take two similar cans of paint; thin out one the usual 30% and the other only 10%. Spraying it in the ordinary manner, the former would give a thin finely atomized film, and the latter a heavy coarse film. By thinning the paint only 5% and heating it to 125°F. we obtain the fine atomization and smooth film of the former, plus the heavy building properties of the latter. If the heavy build is not wanted, thin to about 20% before heating and obtain faster production, smoother film and less chances of sagging.

I recall one problem we had. An expensive item of many contours and angles was to be sprayed in ivory in one coat. The rejects were high, for we either got the paint too thin and did not cover (or in covering sagged too many), or else we got the paint too heavy and obtained too much "orange peel" effect. To obtain just the right balance was like trying to walk a fence. But now, by utilizing heat, we obtain a heavy film of enamel that has depth and a smooth luster that we had never hoped to attain before, and our rejects are negligible.

Actually, we do not have as great a difference in temperatures of enamel and metal as at first appears (unless we spray with heated air, and then the only

thing to watch is the solvents) and what difference does remain has only the beneficial effect of flowing the enamel deeper into the microscopic crevices of the metal or wood. One of the reasons why it is hard to obtain good adhesion with lacquers is that, in spraying them, we merely "hang" them on the surface. It is quite possible that the next advancement in house painting will be centrifugal-force spraying of heated paint.

As for your other question—how high the enamel can be raised in temperature—it all depends on the solvents. In dipping, a little experimentation will show the best working temperature for any given enamel. And the next time the Mrs. asks you to varnish the floor or paint some woodwork, keep the paint in a pan of hot water and see how much nicer it flows out.

I somewhat expect this article to create considerable comment, favorable and otherwise. I know several men in the paint game—chemists, factory representatives, foremen and others—but as far as I know, none of them has given special attention to this subject.

Marietta Opens Branch in Evansville, Indiana

The Marietta Paint & Color Co., which has its factory in Marietta, Ohio, has opened a branch in the Mead Johnson Terminal at Evansville, Ind. Mr. Leonard King, company representative for four years, is in charge. Other branches are at High Point, N. C., and in Canada, Havana, Cuba, and Gardner, Mass. The branch in Evansville will serve Indiana, Illinois and Kentucky.

President of Stanley Chemical Co. Dies

William Samuel Rowland, president of The Stanley Chemical Co., East Berlin, Conn., died suddenly on November 12th while visiting friends in Great Barrington, Mass., preparatory to attending the Cornell-Dartmouth football game.

Mr. Rowland has been prominent in the industrial and social life of New Britain, where for many years he has made his home.

During his engagement by the Stanley Works, Mr. Rowland was instrumental in the development of many valuable processes relating to japan, lacquer and synthetic coating which ultimately led to the establishment of a subsidiary manufacturing organization under his leadership.

During the world war Mr. Rowland served in the Chemical Warfare Service with a commission of Major, assigned to the Development Division. He was married to Helen Rockwell Platt of New Britain in 1915, who with two sons and two daughters survive him.

Notice to Readers

Valuable information about the latest finishes and finishing materials for woods, metals, fabrics, leathers, rubber and various types of composition materials will be presented in an extraordinary article to be featured in January issue of INDUSTRIAL FINISHING.

The Review of Developments in finishing materials during 1936 will include data about standard and special coatings designed to resist various kinds of unusually severe service, as well as finishes that produce strikingly attractive decorative effects. Finishing materials and special treatment for production and repair work in all industries will be presented.

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Finishing Radio Cabinets

by W. T. SMITH

PART III

Filling
Sealing
First-Coating
Shading

Photographs, courtesy of R. C. A.-VICTOR

IT HAS BEEN SAID that modern methods employ an "airplane finish over a horse-and-buggy filler." In some cases this indispensable operation is performed with materials which have not shown as much advancement as that made by stains and top coatings.

The fillers employed on radio cabinets today are, for the most part, of the socalled "quick drying" "4-hour" types, and really vary but little from the long-drying oil fillers of our fathers. The use of polymerized oils, special driers and in a few cases synthetic binders, have alone made the difference. Straight synthetic fillers have never become popular. The writer is familiar with one which appears in paste form, cuts with petroleum naphtha in the conventional manner, pads very well, dries for coating in 30 to 40 minutes, will not gray or shrink, and actually improves adhesion of subsequent coatings. Unfortunately it is not on the market, since the demand for this type of materials has never justified its exploitation.

Radio cabinet fillers are cut from 8 to 16-lbs. per gallon (depending largely on the individual tastes of the finishing foreman) with V. M. & P. or heavier petroleum naphtha, and are applied by brushing, spraying and dipping, in volume in the order named.

Despite the old timers' claim that filler must be "brushed in" and cannot be applied otherwise

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with success, one large plant has for years sprayed all filler at about a 10-lb. cut with internal atomizing guns from pressure tanks. Like the old adage of "proof of the pudding," we point to the fact that it is being done. After all, a properly-cut filler "runs in" to the bottom of the pores which are then filled flush by the padding operation. This would seem to indicate that the actual method of getting it on the wood is of secondary consideration. Brush application needs no discussion; it is a proven method and, especially in small shops, it is the most economical when we consider maximum utilization of material.

Dipping filler on small cabinets (when a cut of filler is prepared in a tank and the cabinet immersed) is practiced to some extent. Filler is not adapted to this usage; the usual result is a tank of dirty naphtha with an accumulated muck of pigment, silex and sawdust in the bottom. The same applies to the limited practice of supplying filler in agitator drums ready for use, as the addition of the soap and water emulsion necessary to maintain suspension is not conducive to faithful filling of pores.

In general, the filling on walnut radio cabinets is surprisingly good, considering the minimum of labor expended thereon. Naturally the care necessary (to say nothing of re-filling) to produce a perfectly filled job by piano standards is impracticable in the present status of the industry.

Forced drying of filler enjoys very little practice in the radio industry. The air-drying period ranges from 2 to 24 hours. Even on the overnight dry work—which fortunately predominates—the quick-dry filler is used in the belief (probably justified) that it offers a margin of safety against the always imminent time when the company may have to rush out work to meet seasonal markets. Needless to say, some radio cabinet filling shows bad shrinkage after a few days—due probably to the use of fillers that dry too rapidly . . . . with a single filling operation.

Sealers or First Coaters

The radio industry probably did more to expedite development of the lacquer sealer, as it is today, than any other factor. During the spirited economic era of 1927 to 1929, when this industry enjoyed its greatest impetus, a demand rose for a high-bodied, easy-sanding first coater that would supplement poor filling and produce a perfect surface with a minimum of sanding after less than one hour of drying. At this period thousands of low-priced cabinets were finished with a single coat of this sealer, steel-wooled and waxed.

A strikingly pleasing flat lacquer job was produced by two consecutive coats of sealer, both sanded and followed by a dead flat lacquer, which possessed the happy faculty of rendering less conspicuous what minor surface defects remained. The use of the very short, easy-sanding sealer has diminished greatly since its users discovered the inevitable re-

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sult of a thick brittle finish film.

Today's sealer is of the same general type but perhaps not quite so easy to sand. The average sealer today ranges from 18% to 22% solids, as against 25% previously insisted on, and carries much less stearate. Sanding is done with No. 5/0 to 7/0 flint paper usually moistened on the back. No. 3/0 steelwool is used in intricate places where sandpaper is impracticable.

One manufacturer wet sands tops with fine paper and naphtha. Still another cuts down all flat surfaces with a light weight, air-operated, portable rubbing machine, using dry sandpaper pads and overhead hoods with suction fans to remove the dust resulting from the operation. These are exceptions. Practically all manufacturers block down flat areas to a smooth surface by using pressed felt or felt-faced wood blocks with the sandpaper.

The quality of the sanding is fairly good, being affected largely by a tendency of some executives to consider such work as unskilled labor and to place it in the hands of incompetent workmen. One large manufacturer so far ignored sanding properties as to do all first coating with mixing lacquer and shellac, on which it is possible to perform merely a scuff sand, thus somewhat increasing rubbing costs on the final coats but repaying its user by improved clarity and toughness. Complaints on finish have been rare in the plant where this practice has been employed.

Still another large manufacturer consistently applies a wash coat of shellac over the filler immediately preceding the conventional coat of lacquer sealer. An improved bond to the wood and somewhat better "holding out" is the result.

In certain rare cases, small quantities of high quality cabinets have been finished with clear lacquer only, built up from the filler in emulation of the conventional piano finish. The result produced is definitely superior in brilliance and toughness to any system employing a sanding sealer, but it involves considerably increased rubbing labor and usually an additional coat. In brief, the sanding sealer has nothing to justify its existence from a quality standpoint, being an expedient in the interest of economy of production.

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"spraying truck frames"

"BRUSH two coats on zoo cages"

"BAKED on U. S. Army chairs"

"AUTOMATIC SPRAY on overhead door equipment"

"on lanterns, oil cans"

"AIR DRY spray on the back of Radiant Heaters"

"WOOD and STEEL card table leg

"for backing of WOOD and METAL sig

"coat castings that AGE IN WEATHER one year"

"dip metal parts of shovels"

"PROTECTIVE PAINT for steel floor boards"

"dipping seat frames of subway ca

"use on motor parts because of its resistance to gasolines, oils, and greases"

"spraying fishing rods"

"backs of gas heaters and floor registers"

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DUM DUMS—ARCO AUTOMOTIVE LACQUER AND SYNITE

Many finishers are under the impression that it is an economy to purchase a reducer and cut the sealer before application. This is one of the most prevalent and most falacious of notions infecting an already hackneyed field. It is acknowledged by all that solvents are but a means of application whereby certain solid ingredients are applied to and distributed over the surface of the merchandise being finished.

Let us assume that a consumer buys a lacquer sealer of 26-oz. solids for $1.30 per gallon and, in the interests of economy, reduces it with a thinner for which he pays $0.90. Let us say he reduces it three to one, that is 25%. This gives him a cost of $1.20 "at the gun." He "saves" $0.10 per gallon. Fine! Let's see: His sealer, if used straight, costs him $1.30 for 26-oz. of solids which is literally the film on his work, or $0.05 per ounce. His cut mixture costs $1.20 per gallon, but contains only 19.5-oz. per gallon, making a per ounce cost of $0.0603 on the work, to say nothing of handling an additional material with the labor and responsibility of cutting. Perhaps he would be still further surprised to learn that his vendor would willingly sell him a sealer of 19.5-oz. solids for $1.20. Need we go further to illustrate this popular method of self-deception?

Shading

This operation, described variously as "shading," "blending," or "uniforming," is one of the most indispensable and at the same time most unfortunate ones employed in the finishing of radio cabinets. It originated in the industry as a means of applying shading, highlighting or antiquing to cabinets by means of spraying a thin lacquer containing transparent color. Soon it evolved into a systematic routine operation, following the sealer sanding, for the purpose of supplementing the staining operation in bringing up weak spots or parts and generally uniforming the entire color effect. With increased production volume, closer cost margins and a diminishing supply of uniformly textured woods, it has grown to be generally accepted as the line of least resistance in producing uniformity in color. Consequently about 90% of the radio cabinets are subjected to this treatment, of which fully 50% are over shaded.

According to my experience, there are perhaps three major objections to this practice:

1) The application of color over a previous clear film, and consequently in the final finish film, serves to obscure the texture and figure of the wood rather than to emphasize and enhance it which is, after all, the primary function of a cabinet finish. Witness for example the painted appearance, especially in the close-grained woods, of the average low-priced radio cabinet.

2) Due to the fact that most shading lacquers are composed of a small amount of cotton, some resin such as ester gum or East Indian gum, together with a considerable amount of asphaltum or similar bitumen as a source of color, their excessive use is likely to result in a short brittle film and, in case of excessive application, hair-line checking. There is a movement now in evidence to make these shading lacquers of a straight cotton solution, colored

HOW TO STAND OUT

ONE of the outstanding industrialists of this age once said, "There are two ways of making yourself stand out from the crowd. One is by having a job so big you can go home before the bell rings if you want to. The other is by finding so much to do that you must stay after the others have gone. The one who enjoys the former once took advantage of the latter."

This is excellent advice for the young man just starting a business career . . . It is equally effective for any type of manufacturing firm if translated to mean, "Put in the extra quality that will make your product stand out." EGYPTIAN has done this for sixty years.

EGYPTIAN service has often stayed on long after the others have gone, and, as a result, all Egyptian finishes, industrial and automotive, have that extra something which makes them leaders in the finishing industry.

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with aniline or acid dyes, which will tend to aid materially in overcoming the above objection.

3) Among shading-gun operators only about one in a hundred has the color eye—the sense of tones and color values—and the delicate touch necessary to perform this operation in such a manner as to produce ideal results. Shading, like milady's make-up, should be used to make the object of adornment look as though it hadn't been used or needed. The present conventional shading operation, consisting of 90% shading stain and 10% skill and time, would approach a praiseworthy ideal much more closely if the proportions were reversed.

Names and trademarks are usually impressed on the bezel or dial, or placed on the wood surface with a decalcomania. The reversed self-sizing type of decalcomania is generally applied by touching the back or sized portion with a mixture of ethyl lactate and water, which amalgamates the sizing to the lacquer surface.

(To be continued next month.)

Pneumatic Products Catalog

An attractive catalog describing and illustrating various instruments, devices and accessories used in connection with compressed-air lines has just been issued by C. A. Norgren Co., Denver, Colo. It is catalog No. 200 and contains 24 pages (including covers) 8½x11-in.

Metal-Cleaning Bulletin

An interesting and informative 2-color bulletin (201-a) which describes and illustrates the Pangborn Type "RA-2" Rotoblast cleaning unit for cleaning metal parts preparatory to finishing, has just been issued by the Pangborn Corp., Hagerstown, Md.

New Prices on Lindol Products

The Celluloid Corp., has just issued a bulletin announcing a revision of prices on tricresyl phosphate (Lindol products) effective November 16. Contracts are accepted on the basis of firm prices through the first quarter of next year. For copies of this new bulletin, write the Celluloid Corp., 10 E. 40th St., New York.

Lacquer Training Course

A lacquer training course for representatives of the Hercules Powder Co.'s customers, has just been inaugurated at the company's experiment station. Classes began on November 5 with a registration of approximately 20 young chemists representing nearly as many companies. The purpose of the course is to teach these men the fundamentals of protective-coating materials and their applications. It is offered to Hercules' customers as a method of helping the industry in a broad way and at the same time benefiting the young men and their employers.

The men will receive their training at the company's experiment station during the five months' course. They will remain in the employ of their respective companies, but the instruction and training facilities are supplied by Hercules; instruction will be given by C. B. Gilbert and G. H. Pfeiffer, research chemists who will devote their entire time to this work. Supplementary talks on special subjects will be given by other members of the Hercules staff.

Also some of the important lacquer raw material manufacturers have been invited to send technical representatives to discuss their products. The idea for this course was conceived by M. G. Milliken, who has had the cooperation of executives of the company in promoting it. J. B. Wiesel is in actual charge of this work and has made all arrangements for it.

A luncheon for the newly arrived chemists was given at the Hotel DuPont on November 5 to acquaint them with each other and with the Hercules men. Greetings were extended them by M. G. Milliken. O. A. Pickett outlined the work they are to do. C. A. Higgins discussed the great opportunities in the protective-coating field; L. N. Bent pointed out that 30 years ago such a course and co-operation between companies would have been impossible, and said that he envied them this chance of getting technical training.

Merry Christmas

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Industrial Finishes

FILLERS - STAINS - ENAMELS - LACQUERS - VARNISHES

Furniture Show Finishes

by Edw. F. Huffman

AT THE MID-SEASON OR Fall Furniture Show held in the American Furniture Mart at Chicago, Nov. 9-14, we were again impressed with the fact that furniture manufacturers are "finish-minded," as they know that a fine finish in keeping with the times is just as important as a well executed design.

Bent wood is showing some popularity as it lines up well with Modern which seems to be in the lead for design, with 18th Century following close behind. Walnut still leads in the woods used. Mahogany is next, with maple showing a gain in Early American and Colonial patterns. Finishers have shown their skill in "blonding" this particular wood (maple) in the curly, fiddle back and birds-eye figured veneers.

In bedroom furniture the blond finish is in evidence in a few of the new suites. For example, one space showed about the latest in artistic design and finishing — a Modern "breakfront" and "break-top" (with center section extended) bedroom suite in four pieces. On the chest and dresser the veneered "brokenfronts" or extended sections were in blond acacia, while the veneer on the sides of the front and top was in striped walnut veneer . . . . finished in semi-gloss luster. The tops and fronts of the vanity pillars were in blond acacia, as were also the inlaid center panels in the striped walnut veneer head and foot boards of the bed.

Reeded moldings are used quite extensively on these new Modern bedroom suites. Circular mirrors are still popular for vanities and dressers.

A number of bedroom suites included combination robe chests with the hanging space cedar lined, while drawer interiors of the chest were in natural finished oak.

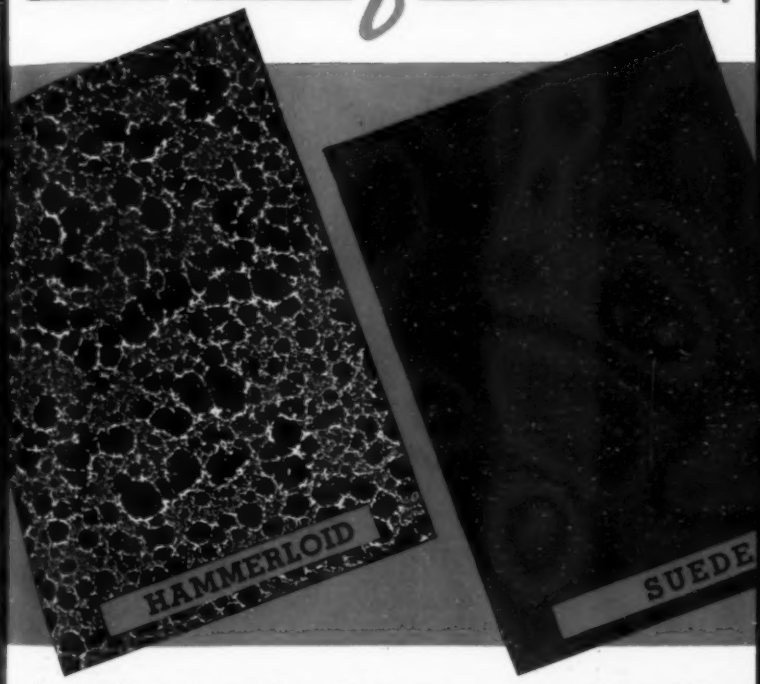
The pulls on these modern pieces consisted of lengths of half-round walnut recessed for finger holds. The ends of some of these wood pulls were finished in old gold.

Although more dining room furniture is being sold, there was only one or two really new patterns shown. These were the Modern style in walnut. All other dining room spaces presented styles of the 18th Century, chiefly in mahogany with crotch and swirl figured mahogany veneer on fronts of cases . . . . finished in golden brown or sherry color.

In living room and novelty furniture, maple and other woods are being bent into sweeping curves and graceful lines that go to make up the new streamlined Modern style. The exhibitor in one large space showed a two-piece suite with a frame of rock elm, the arm and base being one

GLIDDEN ANNOUNCES

two new finishes!



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continuous piece of narrow flat bent wood made secure in the back post and at the front end of the base. Finishes included walnut, honey maple and an attractive blond finish . . . . rubbed to a dull luster. The blond finished frame with backs and cushions in a coral and Chartreuse colored worsted material made a very effective contrast.

All types of tables were shown in Modern and French styles. Solid walnut and mahogany were the woods chiefly used, although solid rock maple was featured in the Colonial and Early American style tables.

In one space showing cocktail, coffee and occasional tables there appeared an outstanding work of art—a credit to both the designer and the finisher. It was a "breakfront" bleached Georgian secretary. The doors of the base were veneered in crotch mahogany and bleached like the top of the piece, the latter having a broken pediment and pierced railing typical of the period.

A very popular dinette suite consisted of an Empire table (with oval top) credenza, low-base china, and four chairs . . . . all in curly maple, blonded and hand rubbed—an attractive finish which brought out the beauty of the delicate maple grain.

Breakfast-set manufacturers are adding more white enamel sets with stainless porcelain refectory tops on the tables. Many of these tops have molded edges painted either in red or black to serve as an effective banding which enhances the beauty of the white poreclain top.

A manufacturer of metal furniture displayed a new Modern style smoker in pastel colored baked enamel with chromium finish. Also, in the metal line, was a spring rocker upholstered in light green corded fabric, but showing no metal. The closed ends and base are stationary, but the seat cushion and back are free to move to and fro like a rocker at the will of the occupant.

H. V. Walker Co. Builds Addition

The H. V. Walker Co. of Elizabeth, N. J., is enlarging its plant and laboratory with a new addition to the present buildings . . . . which will provide considerable floor area for plant expansion. The laboratory will be enlarged to occupy part of one floor. Development of new products and increased production made the added facilities necessary.

Redwood for Venetian Blinds

Favored because of its adaptability to all kinds of decorative treatment under the severest tests of exposure to sun and heat, California redwood is reported to have received wide acceptance this year as a suitable stock for the manufacture of Venetian blinds.

Few of the woodworking factories have been able to stock ahead of orders. Most of the factories are calling for 1-in. clear and vertical grain, or 2x4-in. flat grain stock, although many calls have been supplied with 2-in. shop. Demand is so great, companies report, that the finished product is being shipped as rapidly as manufacturing can be completed.

The extreme heat of the past three seasons in the Middle West and South has been a boon to the use of redwood in this phase of millwork. Lumber containing oils, pitch and resin is reported to have proven unsatisfactory for blinds used in the heat belts, causing failure of the stock to hold paints, stains and other decorative treatments.

California redwood stock contains no pitch or resin, has the ability to stay put and will not warp. In addition, its lightness and ease of working add greatly to its adaptability to this purpose.—California Redwood Association, 405 Montgomery Street, San Francisco, Calif.

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Venetian Blind Finish

by Berkeley S. Vaughan
Superintendent of Wheeler Screen Co.

ALTHOUGH the old adage "clothes make the man" cannot always be taken literally, it is definitely true that nothing is of quite so much importance in a modern Venetian blind as a smooth, durable finish. Really, "the finish makes the blind"! This article is not to be construed as a text on blind finishing but rather a review of certain experiences in this field.

American history is filled with examples of industries that have come into being during the waning years of past depressions. This is not an exact parallel with Venetian blinds because several makers have been in business for decades, but the present Venetian blind has just recently come into the general public eye as a necessity. This writer does not believe that the present vogue for modern things is entirely responsible; indeed, well selected blinds add a harmonious and lovely touch to almost any room, new or old. The new convenient types of hardware and accessories have helped much, but today's better finishing materials have been probably the most contributing factor, permitting fine merchandise to be sold within ordinary reach. Surely, the gentlemen of chemistry have been well repaid for their labors.

Nothing that comes to mind asks more of finishing materials than Venetian blinds. One side is exposed to the blazing sun; the other to the dry heat inside. Each slat is undergoing constant expansion and contraction. Often, particularly in the South, windows are left open and blinds are showered with rain. Salt air is tough on finishes. Here is a real challenge to the finish maker. The even horizontals of the slats have a discomforting habit of accentuating slight failure in coverage or difference in sheen.

Basswood; Port Orford Cedar

Let us spend a moment with the woods used. Basswood and Port Orford cedar are most generally used, although other woods are at present used to some extent, some quite successfully. Basswood and P. O. cedar are about equal in reliability, but should be accorded different treatment. Genuine Port Orford cedar machines to a glass-like surface, and blind makers using it have learned to employ undercoatings that block out effectively the natural resins that are found in woods of the evergreen family. This material lends itself naturally to an elegant finish. Basswood grows naturally in territories where minerals exist in the soil; it should be wintercut when the sap is down to insure light color. When machined expertly it

ADVERTISING PAGES REMOVED

produces a beautiful slat, and the minute "fuzz" may be used to advantage to provide "tooth" for the finish. Either wood, properly finished, is an excellent raw material, and no layman will be able to detect its identity.

Roller Coating; Spraying

Most finish nowadays is applied either by roller coating or by spraying, although other methods are in existence. The success of any finishing method must necessarily depend considerably upon the ingenuity of the user. In the earlier days most manufacturers made their own coating machines, although now excellent equipment may be bought that finishes two or four sides at a time and operates either manually or automatically.

Finishing material should be specially compounded to work properly in roller coating devices. Some operators, especially those who do not make their own slats, roller coat the prime coat when the slats enter the factory, thus retarding the ill effects of moisture changes which occur readily in ⅛-in. thicknesses of wood. The only ill effect of this procedure would be the possible waste of finishing material in subsequent trimming into usable sizes.

Some blind makers are able to get a satisfactory roller coat finish in one coat over the undercoat. Others use two lighter coats over the prime, thus freeing themselves somewhat from possible wrinkling of the finish. Roller coating offers the obvious economy of applying practically all of the material to the slats, losing none in any "off spray." There is also a definite saving in labor due to the measured amount of stock finished in a unit of time. Most roller coat users gauge production to start with white first and progress gradually to the darkest shade to save "washdown" time in the machine.

Early roller coat machines were troublesome affairs. Their success depended largely upon the cleverness of the operator. Most of them had painting rolls of a composition similar to that used in the printing trade, and casting equipment was necessary in order to produce a new set of rollers as often as once a day. Nowadays better rolls may be had that will run weeks without change.

The "heavy parts" of a Venetian blind — headrails, tilt bars and bottom rails—are almost universally sprayed due to the fact that the numerical ratio between these parts and the slats is usually at least 1 to 10.

Certain manufacturers, including most of those whose production is not large, spray the entire finish. It must be said that no type of finish excels the spray type in quality. Its only drawback is the increased material and labor cost, although the latter may be cut down very low with intelligent methods. When roller coated, the slats may be dried in various ways — either horizontally on racks, standing on end at an angle against points, or hung vertically on pins—but if the slats are sprayed it is best to leave them horizontal, just as they were when sprayed, without disturbing them. If the racks are properly designed the slats may be turned over and completely finished without waiting for the first side to dry. Racks also have been designed so that both sides may be sprayed by turning the

racked slats as an entirety, so that it is not necessary to turn each slat. In most cases racks are "home made," although the metals for racks described may be purchased to apply to one's own woodwork.

Finishing Materials; Prime Coat

Now about finishing materials: It is usually necessary to compound finishes especially for this work—either for roller coating or spraying; in fact, the excellent technical advice available throughout the finish industry should be used to advantage. What will work perfectly for one manufacturer may not be suitable for another; it depends entirely upon the physical conditions involved. If a blind maker is short on floor space, drying time is a prime requisite; if not, overnight drying will be satisfactory. Production must be gauged to fit the equipment and facilities at hand.

The prime coat is all important. Its first function is to seal the wood properly and thus prevent any sinking in of the finish coats, which ruins the even sheen that is so necessary in any first class Venetian blind. Furthermore, it should provide certain opacity, as it must be remembered that a majority of blinds are finished in pastel shades. The Ventian blind, when hung in a window, has an annoying habit of disclosing minor defects that might pass unnoticed in other articles. This is due to the peculiar way in which the outside light plays through the slats.

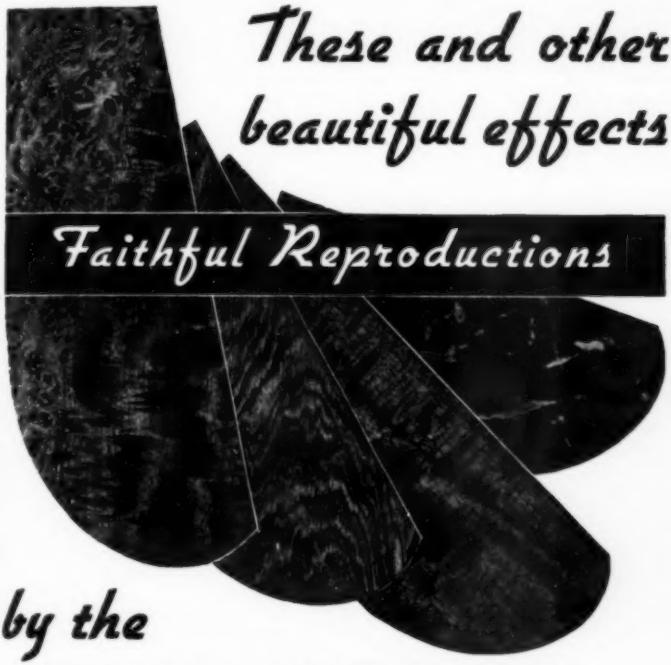
Some prime coats have to be sanded before the top coats are applied, although some of the new synthetic undercoats do not require this treatment, especially if roller coated. It is very important to use undercoats that present a sufficient "tooth" to give the top coat an extra good bond. An undercoat that provides excellent filling of the pores, as well as satisfactory opacity, may not be the right one to use unless it will enter into proper union with the succeeding material. The aforementioned expansion and contraction of the slat during use will be sure to develop this flaw in procedure if it exists.

The Final Finish Coat

The top coat must possess several qualities. It must contain pigments, finely ground with really wonderful hiding power. A synthetic finish with a good proportion of titanium dioxide will usually be satisfactory. It must be fast to light and it must be waterproof. Blinds are often accidentally subjected to rain, and considerable moisture is often present. The number of finishing coats necessary is up to each manufacturer. One person might get as much actual thickness of film in one coat as another does in two, depending upon the process he uses. Many high class manufacturers nowadays roll on two top coats.

Guaranteeing the Venetian Blinds

Some dealers are now beginning to ask prospective sources what guarantee will be given. This is a rather difficult point because almost any good Venetian blind will give many years of service if treated properly by the consumer, whereas the same blind could be ruined in a very short time by careless handling. It seems to this writer that the dealer should point out to his custom-



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Processes patented in the United States and foreign countries

ers that they are buying a fine interior furnishing, to be handled as carefully as they would any of their other possessions. Sometimes eager salesmen promise such things as "a guarantee against warpage," "waterproof finish," and the like, but it must be remembered that all blinds, even those produced by the most highly skilled mechanics, are subject to the frailties of the materials from which they are made, and that good care must be accorded to make these statements come true. Some manufacturers offer a 90-day guarantee which probably works out all right, but of course, the most satisfactory guarantee is the faith that the customer has in his source of supply and prior experience with it.

Metal Slats, Too

This article is concerned chiefly with blinds incorporating wood slats, although there are on the market several brands using metal slats. Some of these metal slats are finished and either baked or air dried. Of course, the finishing problem on this type of blind is simplified. Other slats are made from aluminum or other metals which are finished in various tints, either by a process of oxidation through heat or chemical, or by the electro-deposition of other metals. There really need be no quarrel between wood and metal slats, as each will ultimately find its proper place. The purchaser should consider the merits of each, keeping in mind such things as radiation, cleanliness of surroundings, and the type of interior to be furnished.

Colors of Venetian Blinds

Colors should be carefully selected, although there is an association of manufacturers that does some work along this line. Although most manufacturers today have a range of 12 to 20 slat colors, a vast majority of sales will be from four or five of the popular light tints. It is the writer's opinion that clear attractive tones are to be preferred to colors which have been "smutted down" slightly. Many home owners have cheated themselves out of some of the decorative possibilities of Venetian blinds by feeling it necessary to have a uniform color combination throughout the house. The good decorator would quite often advise combinations of slat and tape colors to blend harmoniously with the mood of each room, using dignified selections for formal places in the house, and livelier gayer colors in other parts where this cheerfulness could be used to advantage.

There is quite a little need for unification throughout the industry as far as colors are concerned. Oftentimes the customer buys part of his requirements from one maker and later is rather disappointed to find blinds of another brand slightly off this original color. It is quite probable that such unification would lead to better sales for all manufacturers.

If a manufacturer of finishing materials wishes to submit a sample, it is well to ask him to send a white. This is a real test of hiding power, and if slats with permissible color variations can be successfully blocked out the material may be said to fill the bill as far as covering is concerned. Most manufacturers now realize that a stock finish will not do, and that an especially compounded product is necessary to meet this exacting need.

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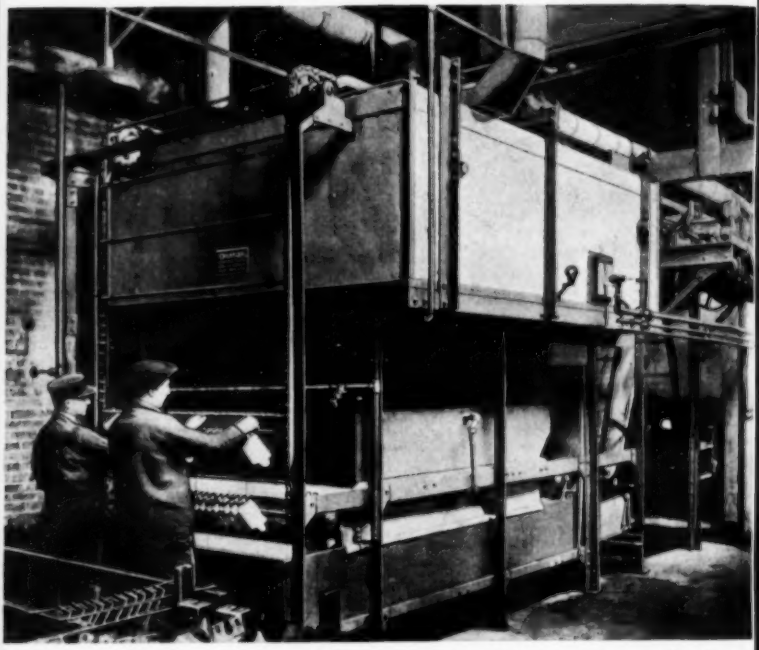

he illustration above shows a completely conveyorized machine for automatically cleaning, insing, drying, japan dipping, draining, baking and cooling of small metal pieces. Two opera- ors handle the work of nine previously required. Photograph, courtesy The Gehnrich Corp.

BAKING ENAMELS

on Sheet Metal and Castings

BY GEORGE McDOUGALL

THE CLEANING of sheet metal in preparation for enameling varies somewhat in different factories, depending on the kind of metal and its condition, including the amount of oil, grease or other foreign matter on it. No general process can be recommended to fit all circumstances. In extreme cases, where the metal is covered with oil or grease, it is sometimes necessary to put this metal through a kerosene bath to remove or cut the oil. In most cases, however, a bath in a hot solution of some

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good commercial cleaning compound of known strength is generally sufficient.

These cleaning solutions are generally "worked" in wooden vats, and they are kept at some suitable uniform temperature ranging from 150° to 212°F. The work is suspended in this solution for whatever length of time is necessary to dissolve any oil and leave the surface perfectly clean.

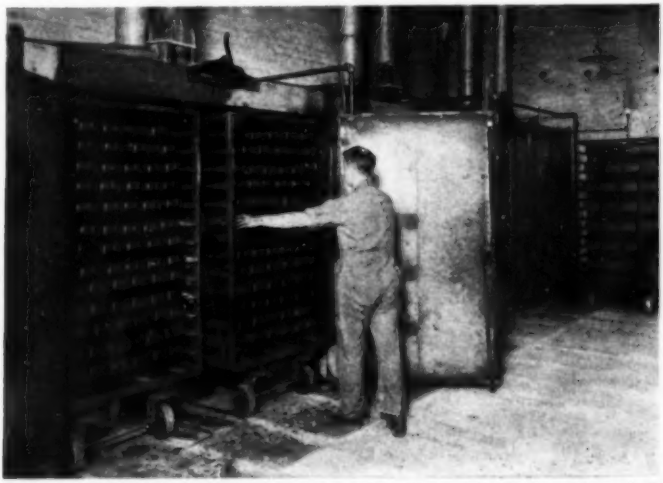
Large and medium size articles are usually suspended from hooks, while small items are often placed in wire or metal baskets, and these sometimes travel through the vat on conveyors. Workmen wear rubber gloves so that no grease or moisture from their hands will spot the cleaned metal, later causing the enamel to crawl or check.

From the cleaning solution the work goes into a clean hot water bath known as a rinsing tank wherein all traces of the cleaning solution are removed. The work is taken from the rinsing tank and hung on a conveyor or rack or put on wire trays and allowed to dry. Often a brisk circulation of warm air, put into motion by a fan, is used to hasten the drying.

The work is now ready for the coating of primer or enamel, which may be dipped or sprayed. Care must be taken at this point to see that the enamel is thoroughly mixed with the proper solvent, and in the exact proportions for this particular job. For best results, a Baume reading is most satisfactory, and this should be strictly adhered to.

Oven Temperatures Baking Time

Baking time may vary from 30 minutes to three hours, starting



Battery of gas-heated, double-truck loading ovens. Correct distribution of heated air permits uniform baking of the load. Photograph, courtesy of The Gehnrich Corp.

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A low-heat, short bake shrivel or wrinkle that is fool-proof—it gives the desired result every time, whether put into the oven as soon as cooled or twenty-four hours later.

Its tough film is unaffected by water, alcohol, oil or grease. It hides imperfections in otherwise smooth metal.

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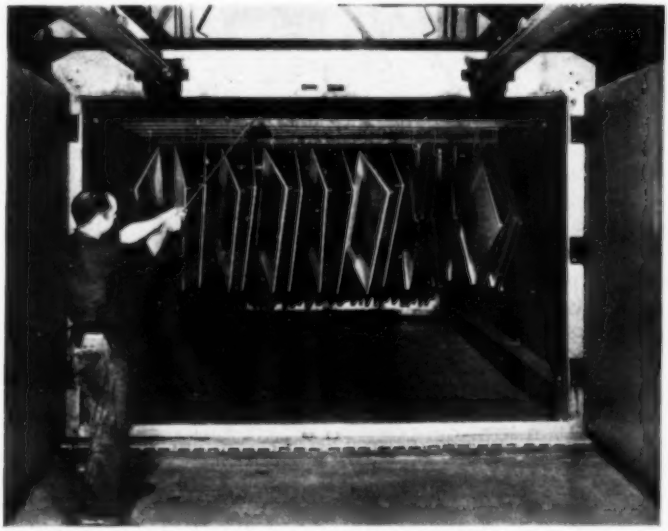

Large box-type gas-fired oven, wherein the work is suspended from cross bars that hang from a double track overhead system. Photo., courtesy of The Gehnrich Corp.

usually from a cold oven (at a room temperature of 80°F.) and varying in heat from 150° to 400°F., depending upon the length of time in the oven and the characteristics of the material being used. Where fused (vitreous) enamel is used, the heat runs as high as 1500°F. for two or three minutes.

Baking enamels are carefully manufactured to do certain things under certain conditions, to produce certain results, and the closer one follows these rules the better the results obtained. For example, if a white enamel should be baked at 160°F. for two hours inside oven heat, and if through some reason the heat were allowed to go higher, say to 180°F., naturally you would burn the enamel from a white to a cream color. This lack of heat control holds good more or less on all colors—and, in addition, over-baking makes the enamel brittle and less durable.

Ovens should be properly controlled with an automatic timing control or, if the ovens do not have this control, a chart should be placed on the outside of the door, and this should be marked to show the time the load went in and when it is to be pulled out.

Multiple Coats Colored Enamel Trouble

Although much of the enameling is one-coat work, where two or more coats are applied the first coat is generally a solid opaque sheen; the second coat, which is usually rubbed, has more gloss; and the third or finish coat is a

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high-gloss semi-opaque material. Up to within reasonable limits, the more coats that are applied, the greater the fullness and depth of color obtained. When applying several coats of enamel, care must be taken with the selection and working of the first coat to see that it has proper adhesion to the metal, and to make sure that it will not become brittle with successive bakings.

Trouble with colored enamel may occur because: 1) the enamel is not thoroughly mixed with the proper solvent; 2) there is a lack of oven heat control; and 3) there is lack of proper oven ventilation. I have seen ovens without a lower draft ventilator.

The new synthetic enamels now in use have many advantages. They bake at higher heats and in less time. They seem to level better and the colors have a sharper clearer tone. They are also tougher and more durable. However, sometimes there is some objection to their skinning over and becoming "seedy," especially if they are shipped in drums or large containers.

Decorations on Baked Enamel Synthetic Enamels

In lettering, or striping, or when applying decalcomania transfers to a baked-enamel surface, some trouble occurs occasionally in getting proper adhesion due to the hardness of the enamel. There are concerns that supply a size that is especially prepared to take care of this condition. Sometimes a small amount of 90° benzole or heavy coal-tar naphtha, mixed with the regular size, will soften the enamel so there will be proper adhesion. The operator will have to judge the proper mixture or material for his own use. He will find that the "treated" size is somewhat slower in drying.

On large sheets of metal that are enameled before they are formed, and which must be punched and clamped after the metal has been coated, the new synthetic enamels seem to be superior to the old type of enamels for toughness and elasticity, for better leveling, and because they bake faster at a higher degree of heat.

Refinishing Procedure
Rubbing the Finish

In refinishing old surfaces, the best way is to entirely remove the old enamel, using some powerful commercial remover or a strong solution of potash or lye; or clean the surface by sandblasting. Be sure that all rust is removed. Careful sanding may be necessary to remove it. Then clean the work with washing solutions the same as on new metal surfaces. If, after this cleaning, some traces of deep rust remain, coat all of these rust spots with a paste made of air-slacked lime, mixed with water; when this is dry, touch up the spots with red lead or orange mineral. After the touch-up paint is dry, sand to a smooth surface and finish in the regular way.

In rubbing out a baked enamel finish, I suggest using a fine waterproof sandpaper and water; or, if rubbing felt is to be used, get the kind that is used in paper mills, as this has a special weaving and it cuts faster on hard surfaces like baked enamel.

Trucks, Trays and Racks

The trucks or portable racks used for small articles, such as

CENTURIES before Ziegfield glorified the American Girl, Egyptian dancers knew that men were not unobservant of maidenly charms . . . . yet they adorned themselves in beads, jewels, shimmering gauze, and glistening oils to enhance the natural beauties they possessed. Even in those days of long ago, finish was the alluring factor in eye-appeal, as it is in our day.

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metal banks, toys, small fittings, etc., are usually built of metal. The top of the rack is solid to prevent dirt falling on the work, and to make the rack more rigid and substantial. The truck should be one of those in which the wheels at one end are mounted on a straight "through" axle, while the two wheels at the other end are individually mounted on swivels. At each end of the truck bed, there should be one or two large hooks or screw eyes so arranged that a convenient handle can be hooked in to pull the truck around. The upright posts are fitted with level parallel 1-in. angle irons, spaced so as to allow trays to slide in and out, giving proper space between trays for ventilation. Holes are bored in the angle-iron slides so that pins may be inserted to prevent the trays from sliding.

The trays are built of 1-in. angle iron with heavy wire mesh for the bottoms. The wire mesh prevents coated parts from sliding together, and it can be easily cleaned.

An Enameling Job on Cast Iron Fittings

Here is a typical example of enameling cast-iron fittings each of which is about 4-in. long and 2-in. in diameter; the fittings come direct from the foundry without any filling or smoothing. They are put through the cleaning solutions and dried in wire baskets. Then they are hung from hooks attached to a 1-in. pipe which is, say 3-ft. long. Each pipe holds ten castings. The operator dips the castings, one pipe load (10) at a time, and lays the pipes in the notches of a slanting rack to drain. The drain rack is built on a slant and has a trough at the low edge so that the enamel drippings drain into a container. The salvaged enamel is used later for cheaper work. This enamel is a carbon black on an asphaltum base and is extremely heavy, with a 23 point Baume reading, and is used without any reduction. After the enamel has thoroughly drained, the operator places these loaded pipes in a rack in which the angle irons are notched so that they will remain firm. After the portable rack is loaded it is moved into the oven, the heat is turned on and the automatic control is set for 250°F. for two hours.

The ovens are long and narrow, with four separate compartments and controls. Because of the heavy consistency of this enamel, the rough surfaces of the castings are well filled, and they get a remarkably smooth job.

...about our January Review Number!

"We might say at this time that we always look forward with particular interest to the January issue of your magazine wherein you publish the newest developments during the year. We are firmly convinced that this is the type of help, from both a manufacturer's and user's standpoint, that builds good will and furthers the use of finishing materials."

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What's New « «

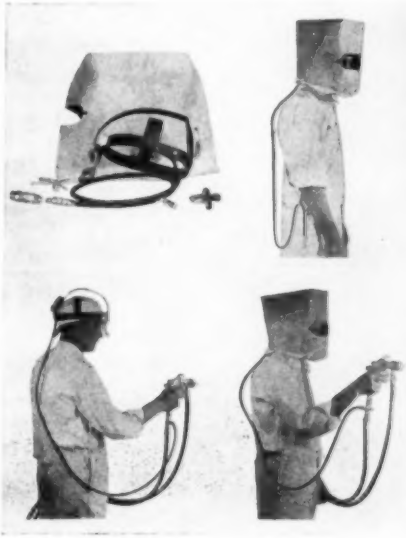
Hood Respirator

Announcement is made by The DeVilbiss Co., Toledo, Ohio, of the development of a new hood respirator especially designed for use in those occupations where there is a fume or dust hazard beyond the protection offered by the more common type of respirator. This new respirator, the type MPH, covers the head and neck fully, and provides complete protection where ventilation is inadequate or against materials present in the air harmful to eyes, ears, or respiratory organs.

Air flows into the hood through an efficient filter, diffuses throughout, and, flowing out through the opening provided for vision, prevents outside atmosphere from approaching the eyes or entering the hood. Thus clear vision without glass or other transparent material to become fogged is provided with perfect safety.

The entire unit is composed of a light-weight headgear, air filter and air hose which is connected to the air line with a special DeVilbiss quick detachable connection, and a light-weight sanitary flame-proofed hood which is supported by the headgear. This hood is fastened around the neck by a draw string. The hood is inexpensive and may be economically removed and replaced by a new one when it becomes soiled.

The new respirator is recommended for use in atmospheres containing offensive chemicals, nauseating vapors, particles of lint, paint spray, dirt or dust. Offering adequate protection against such conditions, it permits maximum comfort and complete freedom of movement without binding or restricting the operator in any way.



Instrument Shows How Much Dust Is in Air

For use in determining the degree of danger of dusty operations, Bausch & Lomb have developed and are offering to Industry through the Willson nationwide safety service organization (Willson Products, Inc., Reading, Pa.) an instrument which simplifies in a remarkable manner the problem of dust control.

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terrupting production. Requiring no skill to operate or technical supervision, daily or hourly checks of dust conditions (sometimes a necessity for protection against unjust claims) can be made readily without fuss or bother.

This new Dust Counter combines in one unit the necessary air sampling device and a dark field microscope viewing and counting system. No accessory laboratory equipment is needed. Suitably cased for transporting, the complete outfit weighs only 12½-lbs.

Air-Motor Agitator for Mixing Paints

The Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill., is offering a new power-agitating paint mixer especially designed to be adapted to any standard lacquer and paint barrel or drum equipped with hand-agitating facilities.

This unit can be furnished with an adapter for male or female thread, as specified by customer. Fittings for special size top opening can be had.

The agitating unit is operated by a powerful air motor, with a control valve to regulate various speeds. Its mechanical construction is simple and foolproof. The air motor has but three moving parts, with hardened ground steel surfaces. It requires no further attention than occasional lubrication, and consumes approximately two to three cubic feet of air per minute at 35 to 50-lbs. pressure. The agitator shaft is driven through a speed reducer. It is quickly attached and detached.

Air-motored agitator in position.

Laboratory Aprons

The Blossom Mfg. Co., 79 Madison Ave., New York, N. Y., writes in to call to the attention of INDUSTRIAL FINISHING readers their transparent oiled-silk laboratory aprons which "are strong, durable, light weight, and waterproof, and resist most acids. They are well made to the extent that they are form fitting to any size person."

The base of the fabric is a very fine hand-woven silk. This is treated by the General Electric Co. with a mixture of oils and chemicals, the formula being the result of intensive laboratory research. Three times the material is alternately saturated and baked at successively high heats.

Blast-Cleaning Metal Parts

A labor saving device of value to metal-cleaning shops, etc., is the recently announced Type "LG" Airless Rotoblast cleaning table with eight individual smaller tables which, as they approach the blasting zone, automatically start to revolve, thus presenting every exposed surface of the work placed upon them to the action of the blast.

The Pangborn Corporation of Hagerstown, Md., manufacturers of the Rotoblast line of airless cleaning equipment, claim that this table is unsurpassed for blast cleaning comparatively frail work, particularly of a flat character. Stove parts, shovels, tools, etc., are already being cleaned by this equipment and both owners and operators are more than

SURFACERS

PORES NEED FILLING for smooth - textured attractive finishes. Presdwood, celotex, natural woods, rough metals and porous compositions need quick-drying, easy-sanding, high-bodied surfacers—in short, our CEL-U-LAK Surfacers.

These have unusually high body, coupled with low viscosity, permitting a heavy application by spray; air dry to sand in 1½ hours, force dry at 125° for 20 minutes. They are ground finely and have phenomenal adhesion and resistance to moisture.

CEL - U - LAK Surfacers are standard in white, ivory, dark grey and red. They have for 6 years been an outstanding successful item in our line. We suggest you examine it for your requirements.

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PLASTICIZER FOR NITROCELLULOSE AND NATURAL GUMS AND RESINS

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Odorless . . . Imparts Lasting Plasticity

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NEW YORK, N. Y. — *World's Largest Producer of Alcohol Solvents*

satisfied with the increased production and lower cleaning costs.

As is typical in all Rotoblast machines, the centrifugal force of a motor-driven wheel is used to replace compressed air for throwing abrasive against the work to be cleaned. This principle also eliminates pressure tanks, hose, nozzles, valves, air chambers, etc. Using only 15-b.hp., the Rotoblast cleans the equivalent to compressed air methods requiring 100 to 150-hp. The savings effected in power, plus the increased production speed and finer finish obtainable makes the airless method an excellent application for many cleaning and metal preparation jobs.

Magnifying Glass

Hailed as "the very thing you need for difficult screen process cutting jobs, for those close, sharp corners . . . . fine lines and letters," the handy screen process glass illustrated here is offered by the Moore Air Brush Co., 4609 Grace St., Chicago, Ill.

According to this company, it "makes difficult cutting easy. This is particularly true of borders and fine letters where the slightest variation, inaccuracy, or miss-cut shows up so strongly on the finished work. Just one peep through this quick adjustable handy glass on your next intricate screen process cutting and you would never be without one."

"Quickly adjustable three ways."

S-B Spray Outfit

The Saylor-Beall Mfg. Co., Detroit, Mich., announces a new "low-cost, efficient spray outfit which includes a small air compressor, a spray gun and the necessary hose and nozzle connections." According to the manufacturer's letter, "the new spray gun shown here combines both internal and external atomizing nozzles, a feature which makes it available for all the various jobs it is called upon to do in industrial plants.

"Low pressure internal atomizing is the most economical system for applying most liquids because such nozzles give the greatest coverage per cubic foot of air used. On the other hand some materials like the new fast-drying lacquers, must be atomized after they leave the gun. The Saylor-Beall gun can be quickly changed to handle such materials and results in an all-purpose spray at a minimum investment."

The Company manufactures a large line of air compressors and accessories, including low-cost outfits especially designed for general maintenance service.

Silk-screen stenciling offers an economical production method of producing many decorative effects on various types of finished surfaces.

Extension Spray Gun

The Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill., is now offering the Thor Model 7 spray gun with a variety of extension arms.

If spraying has to be done in inaccessible places, where the standard production gun would be useless,

Extension is measured between vertical lines shown in illustration.

the new extension guns are ideal. Extensions vary in lengths from 12 to 30-in. Where longer extensions are needed, the manufacturer should be consulted before ordering.

The extension models, at present, are offered in five different styles: Straight; 45°; 90°, internal and external atomization type, and a circular extension spray for spraying the inside of pipes, barrels, etc. The extension heads may be swiveled in any desired direction. Needle valve seats, in the material nozzle, are just the same as on a standard production gun.

Laboratory Mixer

The Mixing Equipment Co., Inc., of Rochester, N. Y., makers of "Lightnin" portable mixers announce the development of a new style model "L" laboratory mixer. Powered by a 1/30-hp. totally-enclosed, air-jacketed and fan-cooled motor, this mixer duplicates on a laboratory scale the actual work of large scale production. It is ruggedly built and designed for continuous duty operation at full load. Shafts and propellor are furnished either in stainless steel or monel metal. Wing nuts permit numerous adjustments to produce a wide variety of mixing actions.

The model "L" is furnished with monel tube and chuck which permit 5-in. of shaft adjustment. The housing is equipped with an oilless outboard bearing. Housing is tapered for insertion in small-neck bottles or jugs. This mixer can be equipped with folding propellers which open by centrifugal force after insertion into small openings; can also be fitted with bung-hole adapter. The weight is slightly under 7-lbs.

Besides its laboratory uses, this model is finding many applications on a commercial scale for mixing small batches of fluids.

The new Lightnin Catalog, No. B-53, completely describes the "Lightnin" line of portable mixers as well as the angular off-center line for fixed installation on large tanks. It will be sent immediately on receipt of your request by the Mixing Equipment Co., 1024 Garson Ave., Rochester, N. Y.

"Sealtone" by V. J. Dolan

A letter from V. J. Dolan & Co., 1830 N. Laramie Ave., Chicago, Ill., advises us that "Sealtone" is a combination of water stain and sealer, which produces a light-fast, penetrating, water-stained and sealed finish ready for sanding within 30 minutes. Sealtone is light-fast—that is non-fading as well as non-bleeding—and is especially suited to furniture manufacturers. Sealtone uniforms wood perfectly, overcoming sap streaks, and permits of producing light finishes on almost any wood.

Industrial Oven Bulletin

Bulletin No. D-1, prepared and published by Drying Systems, Inc., 1800 Foster Ave., Chicago, Ill., contains 12 pages 8½x11-in. which briefly describe and illustrate several sizes and types of small box or compartment type ovens suitable for use in bake finishing operations. Electric-, gas-, and oil-heated ovens are shown in the smaller sizes, as well as some of the large continuous conveyor-type ovens.

Questions « Answers

Striping Problem

I have a problem of running two parallel stripes, each ¼-in. wide, horizontally around a color-enameled metal cabinet that is 27-in. high and 17-in. square with rounded corners. The upper stripe is about 2-in. below the top, and the other one is near it.

At present we are masking the cabinets which means three masks extending clear around the four corners and four flat sides of each cabinet to obtain these two ¼-in. stripes. It is a costly operation, as one man can mask only six cabinest an hour. I would like to use a quicker, easier and more accurate way to apply these stripes. I have tried a wheel striper but it proved to be unsuccessful.—H. W. D.

The problem may be very simple and it may be quite complicated. If the stripes are to be placed on the flat surface of the cabinet, it is quite simple, but if they are to be placed on curved surfaces or on routings and grooves, special adaption will be necessary. We suggest that you be more explicit and furnish a rough sketch, showing the exact location and nature of the stripes.

Presuming that the problem is to stripe a flat surface, we would recommend by all means the wheel striper . . . . for the reason that the wheels are hardened stainless steel, very accurately made, and in addition to this the wheel structure is provided with a lip for use with straight-edge guides or templets.

Your solution lies in the use of templets approximately 3/16 to ¼-in. in thickness. If the surface is perfectly flat, plywood is quite suitable for templets. If the surface is curved in any way, flexible templets made from lead, leather belting or, in some cases, heavy linoleum can be used. A templet should be cut for every stripe, or one templet for multiple stripes. With the use of templets, straight lines, curves or corner pieces embodying both straight and curved lines, can be successfully used in production.

Our Jumbo Model will produce stripes up to ¼-in. in width, but I would advise you to use as narrow a stripe as possible due to the fact that the narrower the wheel, the easier the stripe will be to produce, and the more accurate it will be.—Beugler Mfg. Co.

If you will send us one of these cabinets all striped, we shall be glad to give you the benefit of our experience—as to whether or not it can be profitably striped with our machine.—K. H. Gettner Shop.

Dehumidifying the Finishing Room

In the October number of INDUSTRIAL FINISHING we notice an article by C. L. Nagel on air conditioning the finishing room. My company is interested in finding an inexpensive method of controlling the humidity in our lac-

Industrial FINISHING

. . . an outstanding

Editorial Feature

Again, INDUSTRIAL FINISHING magazine prepares for its big Annual Review Edition—to be issued in January, 1937. Twenty or more pages will be reserved to present, in regular editorial form, the developments and improvements in finishes that have taken place during 1936.

1933, 1934, 1935, 1936, and NOW . . . 1937 bigger and better than all. We couldn't render a greater editorial service to readers of INDUSTRIAL FINISHING than this. It arouses genuine reader interest and stimulates inquiries to a surprising degree.

Finally, there is afforded the opportunity to tie right in with this editorial feature . . . an attractive, sales-stimulating story about your own finishes, or finishing equipment, presented in a full-page, half-page or quarter-page advertisement, as best fits your needs.

What better way than this to start the New Year, to gain wider recognition for your products, or equipment; to supplement the efforts of your sales and service men in overcoming sales resistances; and lastly, to uncover new markets here and there, perhaps existing right within a radius of 100 miles of your plant! Arrange NOW for liberal space.

Don't Miss This BIG 1937 Review

quer spraying and dipping rooms which happen to be built over a river. In fact they are right on the edge of a dam.

In his article, Mr. Nagel suggests that if there is a bundant supply of cheap cold water available, the humidity situation can be readily taken care of. We would like to know more about how it can be done.—L. M. Co. (Makers of Toys).

Under ordinary conditions it is not possible to produce satisfactory operating conditions of temperature and humidity by using river water as a cooling medium. This water can be used in two ways: 1) through cooling coils, and 2) through a spray type washer or dehumidifier. In both cases the dewpoint and dry-bulb temperature of the air would be several degrees higher than the water temperature, and to maintain a relative humidity low enough for comfort and for the protection of the goods in question, it is usually necessary to have a dewpoint considerably below the temperature of river water.

Artesian well water has been used successfully in a great many cases, but this temperature is 10° to 20° lower than the usual river water temperature.

In some cases (depending upon the exact application) it is possible to use the river water for the preliminary cooling or dehumidifying, and to finish off with refrigeration, using the same river water for condenser purposes. This makes an economical system to install and to operate. —J. O. Ross ENGINEERING CO.

To Clean Graining Rollers

We maintain a graining department wherein we use gelatin-coated rolls for transferring the wood impression from a copper plate to our steel cabinets and we now have to wipe these gelatin rolls with ordinary cloths after each operation.

We wonder whether you know of a machine which would clean these gelatin rolls after the transfer of ink from plate to cabinet, the machine consisting of two or three rolls which are immersed, or which pick-up a cleaning solution, the gelatin roll being simply laid in between two or three of these rolls? The machine which we would need should have rolls about 3-ft. long.—G. A. Co. (Steel Products).

At the present time, we are working on the development of a new roll-cleaning machine for cleaning graining rollers. Information on this machine is not yet available because it has not been completed and given a satisfactory test.

We have a machine in use now, by a number of manufacturing plants that do graining work, which has been satisfactory. We will be pleased to prepare a brief

STICK SHELLAC

Better than anything else for repairing imperfections in wood, marble, etc. Made in 70 colors to match all finishes. Write for FREE Color Card and descriptive Booklet.

THE M. L. CAMPBELL COMPANY

706 East 19th Street
KANSAS CITY, MO.

news write-up of this machine and also send you a picture of it at your request.

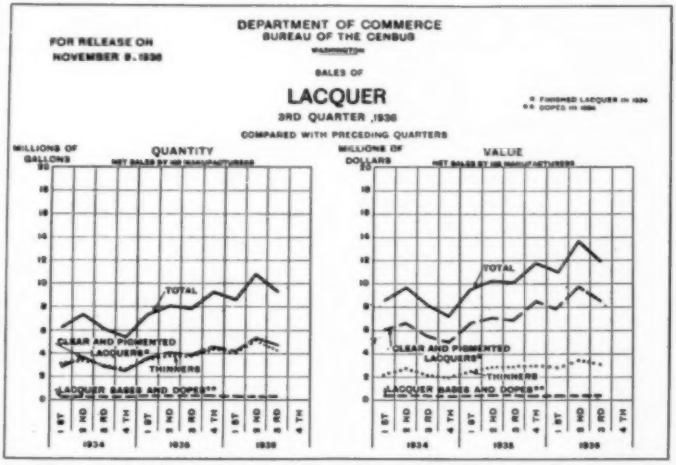
Information on the new machine will not be available for some time. In addition to the above, we will supplement it with information on the new machine as soon as it has proven itself.—Graining Equipment Co.

We manufacture different types of roll-cleaning machines. These machines, however, are made expressly for use in connection with rolls of our own manufacture, marketed by us as a part of our complete process for wood grain reproduction. For this reason it is not our policy to give any information as to the cleaning of these rolls, except as regards to rolls of our own manufacture, as we have no way of knowing whether the method used in our processes would be successful in connection with gelatin rolls of other manufacturers.—Oxford Varnish Corp.

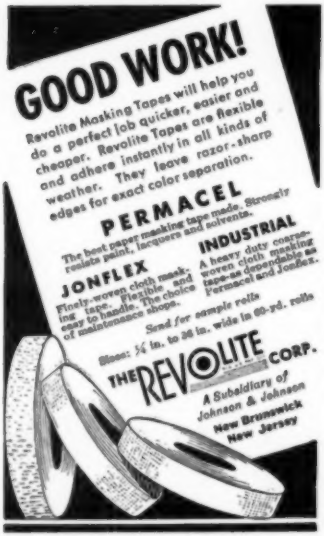
Canoe Finishing

Having helped pay my way through technical school by keeping up a flotilla of twenty-odd canoes belonging to the local canoe club, I can appreciate the feeling which prompted G. D. M.'s inquiry, page 69, October, 1936, INDUSTRIAL FINISHING.

From what the inquirer fails to state, my guess is that the canoe the man tried to refinish was, as were those at school, made of canvas, and not of wood. Canvas canoes take a good finish, and remain not only water-tight but also attractive over a consid-



Looking at the above chart, it is apparent that the sales of lacquer are increasing in volume notwithstanding competition of various materials.


GOOD WORK!
Revolite Masking Tapes will help you do a perfect job quicker, easier and cheaper. Revolite Tapes are flexible and adhere instantly in all kinds of weather. They leave razor-sharp edges for exact color separation.
PERMACEL
The best paper masking tape made. Strongly resists paint, lacquers and solvents.
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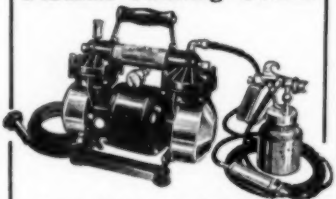
Finely-woven cloth masking tape. Flexible and easy to handle. The choice of maintenance shops.
INDUSTRIAL
A heavy duty coarse-woven cloth masking tape-as dependable as Permacel and Jonflex.
Send for sample rolls
Sizes: ½ in. to 36 in. wide in 60-yd. rolls
THE REVOLITE CORP.
A Subsidiary of Johnson & Johnson
New Brunswick New Jersey



Crown Airflo outfits have ample capacity to handle lacquer, synthetics and all modern finishes with speed, economy and satisfaction. Compressors operate without oil, insuring CLEAN air at all times—fewer moving parts—blower-cooled G-E motor . . extremely portable. Greater pressure and volume per motor horsepower guaranteed. Send for details.

Crown Spray Gun Mfg. Co.
1213 Venice Blvd., Los Angeles, Calif.
Warehouses in Principal Cities

erable period—if the job is done right.

My schedule of operations was about as follows:

1) Wash inside and out; then dry thoroughly.

2) Remove old paint, using any standard varnish remover according to the manufacturer's directions.

3) Dry entire canoe thoroughly. For this I used a small motor-driven blower, taking warm air from around a heater improvised from one of the common "air-tight" wood-burning stoves. This warm dry air was blown gently into a canvas-covered box completely covering the canoe, the blower being tied in at one end while the other end was left open as a vent. After partially drying the canoe with the stern toward the blower I lifted the cover, turned the canoe halfway around, and completed the drying.

4) After making sure that the canoe was dry, and regardless of the final color desired, I primed it with a thin coating—little more than a wash—of aluminum paint, using a long-oil varnish as the vehicle.

5) Then the canoe was given two color coats of best grade marine paint, the material for each coat being cut with the addition of one-half pint of turpentine or wood spirits to the gallon as received. After the first coat had dried thoroughly, it was sanded lightly to assure a better bond with the following coat.

6) The job was finished with a coating of spar varnish. (I always preferred Valspar, but there are many others equally as satisfactory, I believe). The varnish was flowed on, with as little brushing as possible, beginning at

the keel and working toward the gunwales. The boat was in upsidedown position, of course, during all this work.

Where any lettering, initials or decorative design was desired, it was put on over the last coat of color and covered with the spar varnish along with the rest of the canvas.

Jobs turned out in the manner outlined lasted from three to five years, depending upon usage (care being taken to drain the craft after each trip) and the amount of abrasion suffered from sandy beaches and rocky shoals.

As a venture, the method outlined by G. D. M. would probably be serviceable, provided the canvas and the wood skeleton underlying it were thoroughly dried first. But a canvas canoe can take up more water, and hold it longer—as any amateur who has just made a portage can attest—than the best of sponges. And just so long as this water is in the structure of the craft, so long will it fail to take and hold a paint job.—ELTON STERRETT.

Cleaning Brushes

Looking through INDUSTRIAL FINISHING for November, on page 66, I notice an article entitled "Cleaning Brushes." Let me mention that for varnish brushes there is nothing better than linseed oil. To take care of a good varnish brush after using it on a finishing job, rub it out on the edge of the cup to remove excess varnish. Then hang it in a brush-keeper containing linseed oil. The ends of the bristles should hang about 1-in. above the bottom so that all sediment will drip to the bottom.

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- For All Equipment
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When you are ready to use the brush again, scrape the linseed oil out clean against the edge of the brush-keeper and then work the brush into a small quantity of the varnish you intend to use. Do not use this small quantity of varnish on the exposed surfaces of the job you intend finishing; use it underneath or on the back or on some unseen place. Linseed oil is no detriment to varnish. This treatment pertains to varnish brushes only. Never clean varnish brushes in gasoline or turpentine, or any thin solution. It makes them crumy and specky.

If you must clean a new brush, do it with varnish or linseed oil.

This I have learned from 60 years of experience in working varnish brushes in carriage and automobile painting.

Lacquers and other finishing materials are different. Lacquers have taken the place of varnish but synthetic materials are going to take the place of lacquers in time. They are more lasting, heavier bodied, can be brushed on, and will polish . . . . Not dangerous to health.

Having a good clean brush and a good clean surface to varnish and finish, it is interesting work . . . . and an art to keep it smooth and clean and clear.—A. J. COMPTON.

For Over 46 Years
Manufacturing Quality
GOLD and SILVER
Colored Bronze Powder
Write for our booklet—"The Why and How of Bronze Powder"
The O. Hommel Company
Pittsburgh, Pa.

Flowing on Filler

We have been informed that there is a mechanical device on the market to be used in the finishing department for applying filler. We understand this device consists of a tank, hose and nozzle with a motor and pump to create a continuous flow of liquid filler onto the work and back into the tank. We are writing you to know if you can give us the address of the firm who makes this equipment.

P.S.—This is sometimes spoken of as a flooding machine.—C. C. Co. (Furniture Mfrs.).

We do not manufacture the equipment to which you refer and

Pyroxylin Lacquers — Synthetic Enamels — Insulating Varnishes—Baking Enamels
IMPERVIOUS PRODUCTS
FOR INDUSTRIAL USE
IMPERVIOUS VARNISH COMPANY
KOPPERS BUILDING, PITTSBURGH, PA.
Protective Coatings — Finishing Varnishes—Primers and Surfacers
ENAMELS IMPERVIOUS IVC PRODUCTS LACQUERS VARNISHES

cannot suggest names of companies who do.

You might like to know that furniture fillers are readily sprayed with standard spraying equipment, such as you have in your plant, and if it develops that you are interested in this process we shall be glad to submit recommendations.—THE DEVILBISS CO.

Metal Surface Preparation

A new bulletin of 12 pages, 8½x11-in., containing detailed information about various methods of cleaning metals preparatory to finishing, has been published by The R. & H. Chemicals Department of E. I. duPont deNemours & Co., Wilmington, Dela. Every concern doing metal cleaning or finishing should have a copy of this valuable booklet.

With Hilo 25 Years

On October 27 a group of raw material men and fellow plant managers gave a testimonial dinner to William L. Schwalb, secretary of the Hilo Varnish Corp., in commemoration of 25 years of service to the paint industry; all of which time was spent in the employ of the Hilo Corporation.

The dinner was held at the Downtown Athletic Club in New York City, where the group presented Mr. Schwalb with a wallet and travelling bag. Mr. Jim Lundy of the R. J. Brown Petroleum Corporation acted as toastmaster.

Book of Screen Process Work

An authoritative and complete text book covering thoroughly the very latest in the art and craft of practical screen process work on a production basis has been written and illustrated by Mr. Harry L. Hiett. "Screen Process Production" contains 256 pages 6x9-in., 110 illustrations, 44 chapters, and is substantially and attractively bound between stiff-back cloth covers in two colors. This valuable book is priced at only $3.00 by the publisher, Signs of The Times, Cincinnati, Ohio. It can be ordered either from the publisher or through INDUSTRIAL FINISHING.

This half of Auto Fender was CLEANED with a Magic Tack Rag before finishing. Note the smooth, deep luster. No blemishes, specks, lint or sand particles to mar the finish.

"MAGIC" TACK RAGS IMPROVE FINISH 100%

MAGIC TACK RAGS clean every surface before finishing—bring out that deep, smooth luster, produce a faultless surface for white or colored finish. Why use "home made" tack rags when you can buy MAGIC TACK RAGS at trifling cost! They are tackier, do not dry—are dust proof and spontaneous combustion proof. Packed in dozen and gross lots or more. Made only by the

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If your dealer does not carry Magic Tack Rags, write us for sample.

Furniture Finishing

A thoroughly practical book in five parts.
I. Period Furniture and modern styles.
II. Furniture Decoration (Antique Shading, Glazing, etc.)
III. Furniture Finishing (Woods, Finishing Room Tools, Equipment, Materials, etc.)
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222 E. Ohio St. Indianapolis, Ind.

Compressed Air for Spraying

THE accompanying illustration was prepared from material appearing in a bulletin of the Ruemelin Mfg. Co., Milwaukee, Wis. It shows a typical small installation consisting of an upright compressor and air receiver tank with apparatus attached for cooling the heated air, extracting oil, moisture and foreign matter, and catching same in an automatic drain trap.

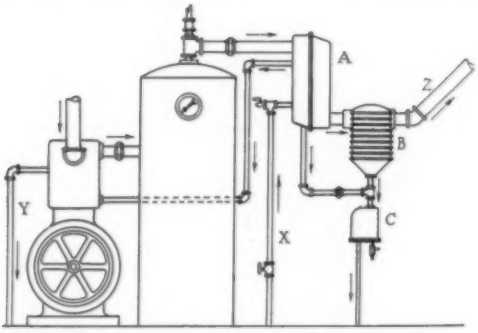
As we all know, the compressed air for spray guns and pneumatic rubbing machines must be clean and dry. Otherwise various troubles occur which cause unsatisfactory results in finishing. While it is customary to install filters or traps near spray booths and rubbing machine stations, to clean the compressed air before it is used, there are also good reasons for cleaning the air of condensed water, oil and foreign matter before it enters the distributing pipe lines. This keeps the pipe lines cleaner and leaves less burden for the small filters at spray booths and stations where rubbing machines are used.

In the illustration shown here, men who are familiar with compressed-air installations will easily recognize most if not all of the pipe lines and connections. For example, cold water is piped first to the "aftercooler" *A* through pipe *X*, then into and through the compressor cooling jackets and away through pipe *Y*.

Hot compressed air from the top of the tank enters the "aftercooler" *A*, and then passes through the water-and-oil expeller *B*, from which it leaves through pipe *Z*. Water, oil and sediment from the expeller drain into the automatic drain trap *D* which, in turn, has a pipe connection to the sewer or other suitable outlet. The drain trap also has a drain plug which can be opened. This outfit is called a compressed-air drying system.

Miniature Office Furniture

HERE'S a strikingly effective way for one of your representatives to present some of your finishes or your finished goods as he travels over the country call-



An air-cooler (A), filter (B) and drain (C) installation at the regulation air compressor and receiver tank.

The entire 8-piece office furniture suite is placed in position on one table top.

ing on customers and prospects. The really well made and skillfully finished miniature article commands immediate attention—often admiration—and it offers a convenient way for a salesman to show his company's goods. It is far more effective than to show a sample of a finished panel, because here all the corners, turnings, moldings, bent work, figured veneers, edge wood, end wood, joints, etc., are presented true to life—and the objects are small enough to be picked up and examined minutely and leisurely, which is something one can not easily do with any full size articles that are as large as a table or office desk.

At any rate, this is the thought that occurred to us as we looked at the miniature suite of eight pieces of fine walnut office furniture recently displayed in the show window of the Business Furniture Co., Indianapolis, Ind.

Arranged on a table top, the eight pieces in the set consist of a desk, swivel chair, arm chair, work table, directors' table, telephone cabinet, costumer and waste basket, all designed to miniature scale and complete in every detail, even to leather upholstery on the chairs.

A value of $1,000 is placed on the set by the Stow-Davis Co. of Grand Rapids, Mich. The design of the set is copied from an Adam suite, a regular design of the company which dates back to its introduction in England by the Adam brothers between 1750 and 1780.

The roll-top desk is 9½-in. high and, like all other pieces in the suite, its every detail is complete and workable, including the pigeon-hole drawers.

Thorough mixing of all coating materials contained in drums and barrels is important. When all particles of solvents and pigment are not uniformly distributed before being transferred from barrels, uneven tones of colors appear and adhesion varies in the applied coating to surfaces.

Industrial FINISHING

Distributed to Executives and Foremen Finishers in industrial plants where finishing coats are applied with finishing equipment

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EDITORIAL

Correct Information About Using Finishing Materials

Many of the troubles that users experience with various finishing materials, cleaning and rubbing compounds, polishes, etc., are due not to lack of quality in the products themselves but rather to the users' lack of detailed and specific information about how, when, where and why to use those materials. As a rule, users of finishing materials are eager to try something new if it offers any advantages in production, but when it comes to the specific detailed instructions about how to use these materials to the best advantage, this information is either not given or not observed to the letter—that is, this is frequently the case.

Manufacturers of finishing materials realize this fact and the majority of them are very careful about releasing newly developed or improved materials to the trade. Right along this line it is interesting and significant to note what a typical manufacturer of quality finishing materials says in connection with the sale and use of products in his company's line:

"We are interested in the sale of our products, but we realize that back of every sale there is, or should be, a need that is best served by the product purchased. To understand that need is the requisite of a program of thoroughness—to know definitely that the product ordered, rather than some other, is the material that meets the situation.

"The second phase of thoroughness is to make sure that the purchaser makes correct application of the product purchased, thus getting full value for his investment.

"This is not a philanthropic program. It is based upon a firm belief that we can prosper only through the complete satisfaction of those who deal with us.

"Therefore, when it became apparent recently that our laboratory had produced a most unusual finishing material, our first thought was not to secure a rush of orders, but to ground our field force thoroughly in every phase of its proper and possible use so they would be trustworthy advisers to concerns seeking the

greatest dollar value for their finishing expenditures."

Users of finishing materials will do well to exercise more care in securing complete information about how to use any new materials they purchase. It would be a good plan to see that printed

* * * INDUSTRIAL FINISHING wishes all of its friends a Merry Christmas and a very Happy Prosperous New Year

or typewritten instructions are on file in the office, and if any successful changes or modifications are later devised, be sure to make note of these, adding the supplementary information to the original instructions. Then, if a sudden change in foremanship of the finishing room occurs, the new foreman can be properly acquainted with specific information as to the proper use of those materials that are on hand and others to be purchased.

Better Metal Finishing Facilities for Small Firms

Among the interesting and informative letters that manufacturers are sending in with other data to be used in INDUSTRIAL FINISHING'S Annual Review of Developments, which is to appear in January issue, here are two paragraphs from one letter that is especially enlightening and significant to concerns in the metal fabricating and finishing fields:

"From our experience in the last year it seems that the metal fabricating industry is definitely convinced that improved and more durable finishes are the leading factors in determining increased sales, and we have found a more widespread interest in the various finishing products and processes than ever before. This interest, which heretofore mainly concerned the automotive industry and a few similar large production industries, seems to have gotten all the way down to the small fabricator, and with the processes now available the small plant is able to finish its products in a fashion that will enable them to compete effectively in this respect with the largest manufacturers.

"We believe that 1937 will see an even more general interest in improving finishes, and believe that the fact that the steel mills themselves are becoming interested in providing rustproof, paint receptive sheets is the best evidence that this trend is proceeding in a very definite direction."

The company writing this letter is in position to know trends in the metal finishing line and we believe that the above paragraphs from their letter accurately forecast the favorable future that is in store for the smaller manufacturers of metal goods.

For Speed, Use Airplanes

The fact that executives of industrial plants are making more use of airplanes for both travel and transportation of goods is emphasized by two routine news releases just received by the Editor. One tells of a sales executive who uses his own private ship to

quickly reach company representatives throughout the country.

He says the airplane is the logical transportation for a sales executive who is confronted with the problem of introducing a new technical specialty which requires training of field men and jobber salesmen. He steps into his ship and within a few hours time he lands at a distant city. There he is met by the regional factory man who drives him about and receives the very latest technical and selling information to pass on to his jobber's salesmen. Thus fresh information and news of developments reach hundreds of the firms' customers in each trading area. Light demonstration material is carried in the ship.

The other item of news tells about a shipment of iron plates being sent from the American Rolling Mill Co., Middletown, O., to a mining company's operations in the wilds of British Honduras, "in a section of the country far from civilization's outposts."

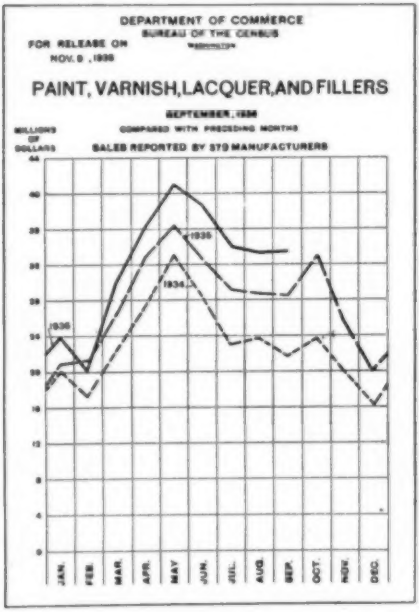
Where speed in transportation is really worthwhile, the airplane offers the logical solution. Airplanes now cover the earth.

1937 Metal Exposition

The 1937 Metal Congress and Exposition will be held October 18th through 22nd, in Atlantic City Auditorium.

This important metal event has been staged and sponsored for 18 successive years by the American Society for Metals. It is one of the oldest and most popular industrial expositions in the country.

The policy of opening the Show only to those men actively interested in production and use of metals proved so popular this year that it will be continued in 1937.



The chart of sales in paints, varnishes, lacquers and fillers, as shown here, reveals the extent that the 1936 business is exceeding that for the years 1935 and 1934. In May, the peak month, the 1936 business almost reached $41,000,000, and for every month from May to September inclusive the 1936 volume of sales has run between $4,000,000 and $5,000,000 ahead of last year, which of course was well ahead of the year 1934.

Letters from I. F. Readers

(Continued from page 9)

Co., Box 3610 Merchandise Mart Station, Chicago, Ill.

"Temp-Urd Wood Process" is from Phenolite Corp., 309 St. Johns Court, Chicago, Ill.

We can supply names and addresses of all manufacturers of products listed in January issue of INDUSTRIAL FINISHING.—Ed.

Magic Tack Rags

Will you kindly advise us where we may purchase for resale, Magic Tack Rags?—G. R. D. Co.

We suggest Wm. A. Juergens Co., 4040 Lagrange St., Toledo, Ohio—a firm that regularly advertises this product in INDUSTRIAL FINISHING.

Cedar Chest Sealer

We are looking for some information and thought you could help us out. Some of the cedar chest manufacturers in the United States are using a liquid material for inside cedar chests in order to slow down the fumes of cedar to prevent a gummy substance from forming. We would like to know what this material consists of.—H. T. Co. (Cedar and Walnut Chests).

Concrete Floor Paint

In your August issue of INDUSTRIAL FINISHING, a concrete floor paint was described by "T. R. E." on page 7. The writer would like to inquire the name of the manufacturer and the address, or the mixture suggested by your magazine.—S. D. Mfg. Co. (Radios).

Porcelain Enamel Patch

In a recent issue of INDUSTRIAL FINISHING there appeared a letter written by a manufacturer requesting information relative to "Vit-Re-Pair" and "Horn Porcelain Patch." Since we are users of porcelain enamel and have occasion from time to time to repair spots of porcelain, we are interested in anything new that might help us out. We are wondering if you would advise us the names of manufacturers of these products, as we would like to contact them and see just what they have to offer.—O. C. Co. (Metal Vaults).

"Vit-Re-Pair" is a product of Vitrowhite Co., 1456 Thome Ave., Chicago, Ill.

"Horn Porcelain Patch" is from A. C. Horn Co., Horn Bldg., Long Island City, N. Y.

Porcelain or vitreous enamel repair material are also made by the Universal Shellac Stick Co., 28 Howard St., New York, N. Y.—Ed.

Who Makes Midwax?

Will you kindly let us know where we can buy the product "Midwax?"—S. C. Co. (Moving, Packing, Shipping, Storing).

We have looked for this in the Thomas Register of American Manufacturers and the 1935 Trade Mark Directory of the National Paint, Varnish and Lacquer Association, but do not find the name "Midwax" listed. Can some reader supply the information?—Ed.

Drum Painting Machine

In the April, 1936, issue of INDUSTRIAL FINISHING, on page 66, we notice an illustration of an automatic drum-painting machine. Please give us the manufacturer's name of this machine so that we may contact them concerning the application of the machine to our operations.—P. M. Co.

The machine illustrated in April issue is a product of Reynolds Metals Co., 19 Rector St., New York, N. Y.

Another machine for doing the same work is made by Binks Mfg. Co., 3132 Carroll Ave., Chicago, Ill.—Ed.

Venetian Blinds

Your October issue contains an article about Venetian Blinds, which has raised our interest for this article, and we do not consider it unlikely that it might be possible to revive a certain demand for these blinds in our country [Norway].

In the old days Venetian blinds were in general use all 'round in this country, but as the mechanical self-lifting blinds came on the market, these old Venetian blinds lost favor, especially because they were rather troublesome and ponderous to operate.

We presume that the Venetian

blind industry has created some up-todate inventions as to this point, and is now turning out an article which answers to the pretentions of the time.

In this anticipation we venture to ask you whether it is possible for you to put us in touch with a reliable maker who could submit us some particular information of same, and perhaps also furnish us with some catalogues, etc. We are in for a rather lively building season now, and after receiving the particulars wanted, we will enter into negotiations with some of the architects and other contractors—and some business may result.—Rodskog Brug & Guldlistefabrik, Gulskogen, NORWAY.

To Make 1/2-in. Stripes

Can you advise us the name of the manufacturer who sells a mechanical striper that will make a ½-in. wide strip?—S. Paint Co.

Mr. W. H. Rohr, Editor
Industrial Finishing Magazine
222 E. Ohio St.
Indianapolis, Ind.

Dear Mr. Rohr:

We wish to express our appreciation for the assistance you have been giving us in our search for an acid-proof finish for respiratory protective equipment we manufacture. We have assembled samples from approximately ten paint and lacquer manufacturers and these are being subjected to laboratory tests to determine the finish best suited for our requirements.

Your service in forwarding communications addressed to us as "N. D. Company" in care of your magazine in answer to our letter inquiry appearing in your November issue, is appreciated, and we are attaching herewith a copy of our reply to Lacquer Products, Inc.

Your letterhead "Devoted to Product Finishing" has certainly proved itself through the service you have extended to us.

Very truly yours,

MINE SAFETY
APPLIANCE CO.
W. J. Sharbaugh
Sales Eng. Dept.

Burn-Proof Lacquer

Will you kindly give us the address of the Nikolas Paint Co.? We understand they have a clear burn-proof lacquer for ash trays to go over a bronze lacquer finish. We are interested and want to get in touch with them regarding same.—B. Novelty Co.

Decorative Material

We have read B. L. Co's. inquiry in Nov. issue of INDUSTRIAL FINISHING (page 5) for new metal finishes. We believe our decorating material "Polytect" will be of interest to you.

"Polytect" is a plastic paint which differs from other plastic paints on account of its possibility to be polished and metallized directly. Under separate cover we are sending you a few samples to show you what beautiful designs can be obtained with our product.—American Polytect Corp.

The sample-finished pieces of heavy paper and wood picture frame molding show attractive designs in plastic paints which have been metalized all over.—Ed.

Classified Advertising

POSITION WANTED.

Finishing foreman go anywhere. Experience: 11 years cabinet finishing, 7 years furniture finishing. Handle any number of men. Best of references. Address IF-646, care Industrial Finishing.

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By a working finishing foreman. 34 years' experience in all kinds of wood finishes and colors. Store, bar, office and bank fixtures. Understands modern methods, production and can handle any number of men. Reasonable salary. Go anywhere. Address IF-643, care Industrial Finishing.

SALESMAN WANTED.

We are opening up new territory and have the Pittsburgh-Wheeling district open for an aggressive high-grade salesman. We cater to the industrial trade only and have a high-grade line of paints, varnishes, enamels and lacquers. Must have an experienced man who knows the trade. An attractive proposition for the right man. Address IF-644, care Industrial Finishing.

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With established following wanted by reputable eastern manufacturer. Attractive proposition for immediate business. State volume and territory covered. Address, IF-639, care Industrial Finishing.

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Manufacturer of complete high-grade line of Enamels, Lacquers and other metal finishes has one or two open territories for which it is seeking experienced salesmen, preferably with following, operating on straight commission. Address IF-645, care Industrial Finishing.

SALESMAN WANTED.

To cover industrial trade in Wisconsin territory. We make a complete line of paints, varnishes, enamels and lacquers and want an aggressive high-grade salesman acquainted with the trade in this territory. Preferably one who is employed but looking for a greater opportunity than he has at present. We will make an attractive proposition to the right man. Address IF-640, care Industrial Finishing.

SALESMEN WANTED.

Executive sales position and several fertile territories open in the Industrial Division of Standard Varnish Works, New York. Three good men are wanted.

Give full particulars of your past experience and what you can do. Men with some experience in synthetic finishes preferred. All information will be treated strictly confidential. Address answers to PAUL SOMMER, care of the above.

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